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**Some Points from the Reports of Committees on
Obstetric Education of Physicians of the White
House Conference on Child Health and Protection***

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Chicago

The White House Conference on Child Health and Protection recognized the importance of health and of the doctor in relation to this movement for child health and protection by having two of the sections devote their effort to medical problems. Section I, on medical service, was made up of three committees, one of which devoted its entire attention to the problems of maternity, which included mother, fetus and newly born infant; a second committee whose interest centered around the medical care of the infant and child, and a third committee on growth and development.

From the outset of the work, the Section and Committee Chairmen of Section I recognized the tremendous and fundamental importance of education in connection with any movement of this kind, which was intended to contribute permanently to the welfare of future generations.

Naturally, the work devolved more on the chairmen and members of the Committees on Prenatal and Maternal Care and on Medical Service for Children. These committees were inclined to stress the phases of medical education which they believed would contribute most to the accomplishment of the purposes of this conference. There was no desire to minimize the tremendous importance of education in other branches of medicine and surgery, nor in the basic medical sciences.

Perhaps, it might also be stated with some degree of fairness that there may be different viewpoints with reference to the ultimate purposes of medical education. Medicine is commonly recognized as an art and a science, and as such is an important discipline, but it is something more which is not universally recognized even though this purpose is in reality the only justification for its existence. It is true, that we all admire the artist in the surgeon, and that we marvel at the scientific studies which have made it possible to perform the marvelous and mul-

*Read before the Forty-second Annual Meeting of the Association of American Medical Colleges, held in New Orleans, Nov. 30, Dec. 1 and 2, 1931.

titudinous operations, with relative safety to the patient. But the justification and the purpose of the operation is not its performance, its artistry, or science, but the service or benefit to the patient. Doubtless all of us, especially the patients, appreciate the purpose, though all may not be gratified with the results.

We are also imbued with the idea that we should try to help our patients though sometimes it seems possible that performance is stressed more than results.

Medical men, as a rule, have more or less definite ideas of service to their individual patients, and while, in the main, helping individual patients also benefits the group, nevertheless there is often lacking the power of looking at problems of illness from a collective or community point of view. The narrow interest of the individual may not coincide with the best interests of society. It is the lack of this viewpoint which may appear in our medical education and among the students who graduate.

One may treat a contagious disease with perfect satisfaction and good judgment, so far as the patient is concerned, as an individual, but if there were no police powers and quarantine laws, how many physicians would insist on their patients taking the necessary precautions to protect others? In other words, are we educating doctors and others who are interested in medical practice to the larger aspects of medicine?

The great importance of properly filling out the various certificates and blanks connected with vital statistics is well recognized and yet, unless more or less compulsion were exercised, few would ever be filled. In a similar manner, great stress is properly placed on the diagnosis and cure of disease and this is, of course, fundamental. On the other hand, how many are willing to go through the grinding routine of really practicing preventive medicine not only as applied to individual patients but to groups in society? If every doctor who is now practicing had really been converted to the viewpoint of preventive medicine, could one imagine the appalling lack of the application of prophylactic measures against the spread of contagious diseases which can be controlled by measures which we already know? If all the medically trained personnel of this country were thoroughly alive to this viewpoint, present conditions would not exist. How few, among the members of the various professional groups educated in some phases of the healing arts, apply preventive medicine by means of various kinds of health audits to their individual patients. One might mention the dentists, some practitioners of pediatrics, some who are interested in obstetrics, some internists and a few others. It is probably safe to assert

that even among these groups such individual measures are thoroughly and generally applied by only a few and to a relatively small number of persons.

If one undertakes to extend such measures on a large scale to large groups in any community, definite opposition is apt to arise because of the lack of training and education to a social and community viewpoint. If such viewpoints could be inculcated into all medical students and practitioners there would be much less concern about so-called socialized medicine because practitioners of medicine and others would be fully meeting their obligations of service to their individual patients and to the community.

It seems that some such viewpoint is a very fundamental and important part of any program of medical education. Those, who are interested in carrying forward health measures, must have both an individual and collective point of view and work for the health of the community. This applies no more to doctors and the allied professions than to citizens in general who must realize that they are not only responsible for the effect of their individual acts upon themselves but also upon the community. If we become a nation dominated by self interested and self seeking individuals, who selfishly carry out their own desires without due regard to the reaction upon themselves and upon other members of society and civilization, we all are to blame.

It is also necessary to recognize and teach the importance of race betterment, which is a problem of enormous importance. The one who renders maternity care is in the best position to work out some of the practical solutions of these questions, but he must be imbued with sound knowledge and ideas as applied to the individual and to society.

Eugenics hardly came within the scope of the conference which limited its considerations to events which occurred subsequent to conception. It was recognized that many infants are born who are useless or even damaging to society and to the progress of the human race. We should have and impart greater knowledge relative to hereditary influences and ultimately be able to prevent the birth of those who are defective and constitute a burden upon or a menace to society. If we could be certain of the laws of heredity, as applied to human beings, the prevention of the birth of these individuals by checking the procreative powers of their parents temporarily or permanently would be a blessing to humanity.

Medical students should have a better understanding of these great social and human problems and benefit by the knowledge which we possess and be taught how to apply it. It is difficult to know just

how far to go with such an educational scheme, but progress should be made in the development of a sane program. The medical student must acquire an understanding of these larger problems connected with reproduction and maternity, and while continuing to learn to give individual care of high quality, he should acquire a collective or social point of view.

With these prefatory remarks, it may be well to consider some of the more specific problems with references to obstetric teaching and education.

Obstetric Teaching and Education

The conditions surrounding maternity in this country are entirely different than those of Europe. Comparisons of results in this country with those of other nations are frequently made. The midwives of foreign countries do most of the routine obstetrical work. They have been well trained to carry out their practice and deliver many cases under supervision before they engage upon independent work.

The doctors of this country who graduated a generation or less ago had, in many instances, little practical experience either with or without supervision. Even today many medical graduates have much less clinical or practical experience with maternity cases than the graduate midwives of many countries.

The doctors of this country have assumed for many years past the responsibility for furnishing care to both normal and abnormal obstetrical cases, and yet, on the whole, they have never generally received the necessary education and training. One of the chief reasons for this is the lack of adequate "Frauenkliniks" in connection with our centers of medical education.

The high maternal mortality rate in this country is an indictment of the maternity care which is given and a reflection upon the training and education of the personnel who are responsible for furnishing maternity care. This does not imply any criticism of the persons who carry out obstetric practice because most of them have in all probability made the most of their opportunities and conscientiously apply the knowledge and use the training which they have received.

The various subcommittees charged with the carrying out of this study, on which the conclusions and recommendations are based, have given generously of their time and ability to bring their work to a successful termination, and the Chairman wishes to thank them most heartily for their cooperation in carrying out the study along the general lines which were blocked out by him. The first step in such a scrutiny of the training and education of those who are charged with furnishing

maternity care is to determine who are the persons involved in the different categories. Following out this thought, various subdivisions of the subcommittee on obstetric teaching and education were formed. These consisted of, one on medical education proper, i.e., the training of doctors to practice obstetrics. Naturally, this study involved a consideration of the undergraduate training which precedes the granting of a license to practice medicine and of subsequent or postgraduate education. Another subdivision undertook to study the midwife situation in this country from the standpoint of training and education. A third group studied the obstetric education of nurses and nursing attendants, and a forth subdivision considered the obstetric education of the laity and of social workers.

Most workers in the field of maternity care see relatively few maternity cases so that a maternal death occurring once in approximately 140 cases, according to the present maternal mortality rate in the United States, does not make much impression on the individual physician. If, however, one considers the fact that there are approximately 15,000 maternal deaths annually in this country, the figures become impressive, especially when we realize that our rate is 7.0 (1929) per 1,000 living births, as compared with the best in other countries of 2.8. The really tragic part of this is that most of these deaths occur from causes which are controllable. If one realizes from the mass of figures that approximately three-fourths of the maternal deaths result from such causes as infection, toxemia, hemorrhage, the statistics assume added importance. This impresses upon us the fact that the prevention or early recognition of these conditions is of the greatest importance, as our curative treatment is far from satisfactory once the complications have arisen.

Fetal and early infant deaths become of great importance when we realize the large number of deaths; the dead born fetuses aggregate about 86,000 annually and the infants dying within the first two weeks amount to about 80,000. Many of these also die from preventable infections and from trauma which can also be controlled to some extent. Prematurity accounts for many fatalities and often these too early births can be prevented until the fetus is more mature.

Less than a century ago the possibility of the transmission of puerperal infection was promulgated. It was many years before this idea gained general recognition. This was the first step in the practice of preventive obstetrics. Until relatively recent times, practically the only obstetrics taught in our medical schools was the diagnosis of pregnancy and the care at the time of delivery. Less than a generation ago pre-

natal care was not taught in medical schools and there was practically no opportunity for students to examine, observe, and participate in the management of pregnancy and labor.

The situation in Europe was much better in some respects and most of the leading obstetricians of today had to complete their training and education in the medical centers of Europe where there were well established "Frauenkliniks." It is not far from the truth to state that there were as many or more well organized "Frauenkliniks" in Germany sixty years ago than there are in this country today.

It is obvious then that our obstetric educational facilities in this country have been entirely inadequate insofar as the teaching of actual maternity care is concerned, as there have been and still are too few well organized women's clinics, in connection with the medical schools of this country, to supply the necessary training and experience to medical graduates, to say nothing of the dearth of facilities to develop specialists in this field.

Until the last twelve or fifteen years, very little attention has been given to the education of students in the proper care of the pregnant woman not only for her own benefit but also for the welfare of her infant. This is an extremely important phase in the education of the student because he acquires the viewpoint of preventing and detecting complications early before they have advanced to a serious degree. He should not only learn to apply this to the individual patient but also come to appreciate the importance and significance to the community at large.

The committee studied this question of education from various angles and felt that, in the main, there were three major problems in obstetric training and education from the medical standpoint. They consisted of the adequate discipline of the undergraduate student, of the postgraduate training, and of the real graduate instruction.

Undergraduate Education

The meaning of the first is quite generally understood but there is much confusion relative to the significance of postgraduate and graduate education.

Undergraduate medical education has, in the main, two purposes. One is to give the student sufficient education and training to enable him to carry on the general practice of medicine and surgery, with a reasonable degree of safety to the public. It presupposes that his progress will not cease with the granting of his degree and the license to practice. The other is to furnish the necessary groundwork for the future education and training which will enable the graduate to profit-

ably continue his studies with a view of becoming a teacher, an investigator, or a highly trained specialist in some field of medicine. Insofar as obstetrics is concerned, the majority of students at the time of graduation are not qualified to assume the responsibilities of caring for maternity cases. This applies to other types of medical and surgical work which do not come under consideration at this time. They may have had, in most instances, sufficient theoretical training, but are lacking in actual experience. Many students have not delivered any women at the time of their graduation. This situation, together with other considerations, has led to the requirement of an intern year by some schools and by some states, as a preliminary to the granting of a license. Some require the inclusion of a maternity service as a part of the training received during this intern year. Many students seek such additional training even though they may not be required to have it. We feel that an internship with an adequate maternity service should be required, but whether the state or school should make this training obligatory may be a debatable question.

Postgraduate Education

The term "postgraduate work" has been rather loosely applied to signify most any type of educational work taken after graduation and the granting of a degree. The varying character of this work and the great difference in the amount of time spent in acquiring this knowledge has been so enormous that a statement that one has done postgraduate work in obstetrics means nothing definite. It might, on the one hand, signify a period of a few weeks' time spent in caring for normal cases in the home or simply the observation of normal and complicated deliveries in a hospital, or, on the other hand, it might indicate that the doctor had spent some time in serious study under some capable and stimulating teacher.

Various postgraduate schools have sprung up, and in these various courses are given for tuition fees, usually of considerable size. The attempt is made to furnish courses such as are desired by the applicants, but, in general, no serious attempts are made to perfect and round out a man's training in his special field. This type of postgraduate education has been developed more or less by many medical schools and has served a very useful purpose.

It is, however, quite different from graduate work which has a rather definite and generally understood meaning in other educational fields. Most universities have graduate schools in other educational fields where advanced students can do intensive specialized and original work which leads to the granting of an advanced degree. Very few

medical schools have undertaken to conduct a graduate school of this type with the granting of a Master's or a Doctor of Philosophy degree after two or three years' training. Others do real graduate work and offer fine opportunities without the formal establishment of a graduate school of medicine and without the granting of a degree. Whether or not a degree is granted does not seem to be essential, but there is a definite difference in the character of the opportunity offered and in the type of education and training required, and this constitutes the real difference between so-called postgraduate and graduate training and education.

One should consider the objectives of these different types of education and what influence they have on the practice of obstetrics and maternity care. The purposes of postgraduate training are for self improvement by the securing of additional training, and this is almost essential for the man who wishes to be a good practitioner of obstetrics. There have been relatively few places where additional training in obstetrics could be secured. Such opportunities have been mostly in the large cities in connection with special maternity hospitals which have often had no close connection with medical schools. It should be recognized that these postgraduate courses are necessary not only for additional fundamental training but also as refresher courses to bring practitioners in contact with newer knowledge and methods. The various ways of accomplishing this have been considered in more detail in the report on graduate education.

The states have recognized and assumed the responsibility of undergraduate medical education. It is logical that a state should undertake to supply its citizens with well trained practitioners of medicine. It is also consistent to expect that the state should furnish the opportunity to these practitioners of keeping themselves up to date and capable of furnishing the citizens with the best possible care. This applies with particular force to maternity care which has become a state and a national problem and policy not alone in the U. S. A. but in many other civilized countries. This plan should take care of the development and progress of the general practitioners along obstetric lines.

Graduate Education

It is very important and vital to meet other educational needs if the best type of maternal care is to be secured. It is requisite that teachers, investigators, and well qualified specialists be continually trained along obstetric lines. This can best be done by serious graduate work which would take anywhere from four to ten years after graduation. The termination of this period of education and training would, of course,

not be final and the man would naturally continue to learn and improve. The best type of doctor never completes his education, but is always moving forward. We feel that if the recommendations of the committees on undergraduate and graduate education of medical students were carried out that there would be real progress in obstetric practice, with marked lessening of maternal, fetal, neonatal, and infant morbidity and mortality.

It is, however, necessary that the various needs be recognized by university authorities, medical schools, hospital authorities and departments of obstetrics and gynecology, and that some plans be made to meet the needs for the facilities for education and training in obstetrics.

Outline of Teaching Plan

Recognizing that adequate education is fundamental to any program for maternal care and the closely related ideal of child health and protection, the Committee on Prenatal and Maternal Care feels that:

1. A more thorough correlation and dovetailing of obstetric teaching with that of the basic sciences is essential.
2. An enlargement and establishment of women's clinics under the control of a unified department of obstetrics and gynecology, in connection with every medical school, is fundamental.
3. Teaching students the importance of consecutive preconceptual, antepartum, intrapartum and postpartum care not only for the detection and prevention of disease in the individual but also for the solution of larger social problems, is of tremendous value.
4. Residence of students in a maternity hospital where they may, during a sufficient period of time, observe and participate in the care of maternity and neonatal cases, both normal and abnormal, is vital.
5. Observation and participation in home deliveries, with adequate pedagogic supervision, is of importance.
6. The opportunity to utilize and see demonstration material of all kinds is very valuable.
7. After graduation all students should be required by the school or the state to serve an internship of at least one year before being allowed to practice medicine, and that in the case of those who expect to practice obstetrics a maternity service should be obligatory.
8. State medical schools have assumed the responsibility of undergraduate medical education. It is incumbent on them to provide educational courses for the practitioners of the state. This can be accomplished by courses at the school or by extension or circuit courses taken to the doctors in various localities.
9. Hospitals and some medical schools must provide shorter or

longer refresher courses to meet the needs of general practitioners and specialists.

10. Some medical schools must provide for serious prolonged graduate study, with the idea of developing well equipped specialists, teachers, and investigators in the field of obstetrics and gynecology.

11. Adequate financial support from taxes or gifts is absolutely vital for carrying out such an educational program, though there are many resources which are not being adequately utilized at the present time.

12. Some satisfactory standards must be set up and required of any medical man who designates himself as a specialist in obstetrics and gynecology.

If, in conclusion, I may be permitted to express a few personal opinions, I should like to add that medical schools should not assume the responsibility for the education and training of more medical students than they have the facilities for handling. If there are gaps in their educational scheme, they should be filled by affiliations with other schools or with hospitals and other institutions. Some of these gaps could be bridged by efforts directed toward harmonizing courses in different medical schools to facilitate the migration of students so that they could secure the type of contact and training best suited to their desires and needs. The students should be attached to their goal and to their educational ideals and not to an institution.

As a result of such education, the doctors who practice obstetrics should act, both collectively and individually, as leaders in their communities to secure the health and protection of mothers and infants. They should apply and disseminate existing knowledge, and they, together with basic and other medical scientists, should continue to push forward the frontiers of knowledge so that new facts may be secured and applied which will add to the security, improvement, health, and happiness of future generations.

Postgraduate Teaching in Obstetrics Through Extramural Courses*

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It can not be denied that the proper basis for sound practice in obstetrics lies in adequate undergraduate instruction, both theoretical and clinical. Recent surveys have, however, pointed out very graphically that few even of our approved medical schools can supply the optimum in practical instruction through lack of sufficient beds in the maternity departments. But even if this condition could be altered by unexampled munificences on the part of the public or of legislatures, there would still remain another long period of effort directed at those who had passed beyond the portals of the schools and into the field of practice. In the rough and tumble of competitive medicine, sound ideas and conservative practices are often soon forgotten, and except for the few who boast a strong conviction to the ideals of their former instructors, medical procedure soon comes to the level of that recognized in the community.

In obstetric practice, more than elsewhere, the general practitioner has borne and will continue to bear the brunt of the work, and yet, except for the occasional discussion of an obstetric topic at the county or district medical society meeting, he has little or no contact with modern thought and changing practice. He knows how to deliver his patients with more or less success, and his uncritical clientele demands nothing better than their mothers had. He drifts along supremely unconscious of the fact that obstetrics, like the rest of medicine, is a developing science. The large majority of the women of the country are attended by general practitioners, and it is to this large group that post-graduate extramural teaching in obstetrics is directed.

The aim of the effort is not to make specialists, but rather to awaken a renewed interest in child-bearing and its associated problems, with the hope that practice may be improved to the point of reducing the maternal and infant mortality. The deplorable record of this country in recent years has been sufficiently stressed, but there has been no agreement in placing the responsibility, except to point out that both the laity and the profession must share the blame.

There is reason to believe that the most serious influence now oper-

*Read before the Forty-second Annual Meeting of the Association of American Medical Colleges, held in New Orleans, Nov. 30, Dec. 1 and 2, 1931.

ative is the radical character of many obstetric writings and much obstetric practice, which has led many practitioners away from the ideals of their youth into fields that are unfamiliar but alluring. With all the assurance and convincingness of radicals anywhere, these surgically minded individuals have preached the pathologic character of the child bearing process and the virtues of instrumental intervention in labor, until the general man feels that, unless he accepts their teachings, his confreres and his public will consider him old-fashioned. Something must be done to bring back youthful idealism and a realization that "intelligent watchful waiting" is as virtuous as ever and that conservatism is still strongly entrenched among the leaders in constructive obstetric thought.

It has been largely with these ideas in mind that postgraduate extramural teaching has been instituted. It represents an effort to bring advanced conservative thought to the physician in his own community. From experience it is known that the mountain will not come to Mahomet, but only within the past fifteen years has Mahomet condescended to go to the mountain. The challenge laid before the other branches of medicine by the pediatricians during the war period in North Carolina has been accepted by the obstetricians only within the past few years. Depending on local conditions, several plans have been adopted in different sections of the country, but my own interest has been largely in the Iowa plan which offers, I believe, certain advantages not to be found in the others.

Iowa Plan

The circuit plan of teaching has been adopted, with centers connected by all-weather roads for the convenience of the instructors as well as of the registrants. Centers are likewise chosen to serve neighboring small towns where the enthusiasm for the work is the greatest. Every member of organized medicine within an hour's drive (forty miles) is viewed as a prospective member and is invited to participate. In some instances registrants have come regularly from greater distances. Classes are held at a given hour each week for ten weeks in succession, unless the sequence must be broken by conflicting holidays, such as Christmas or New Years Day. The local county medical society assumes the responsibility for providing the meeting place, a hotel or hospital where a satisfactory dinner may be obtained at a reasonable cost, and may appoint a committee for this purpose, but registration is not limited by county lines. Class enthusiasm sometimes demands the election of officers but such organization is not viewed as important.

The first experimental course was given in the winter of 1929-1930

in two centers, where the work of organization and promotion was undertaken by committees of the local medical groups working with the dean of the College of Medicine. With the president of the State Medical Society, an otolaryngolist, an enthusiastic member of one of these groups, the State Society saw its opportunity for constructive service, and appointed a speakers bureau committee of three members to provide for a continuation of this effort as well as to coordinate the demand for speakers for medical and lay audiences with the available supply. At the conclusion of this ten weeks course, a questionnaire was sent to each participant asking for criticisms and suggestions. The almost unanimous opinion accorded with the continued interest shown and indicated that the appeal was sincere and the interest real. Since then, courses in obstetrics and other subjects have been in great demand and yearly efforts of this sort have been sponsored. The Speakers Bureau Committee works with the local groups to perfect organization but the initial demand originates in the latter.

In Oklahoma and Kansas, organization and promotion are in the hands of the Extension Division of the State University, which acts quite independently; while in Wisconsin the guiding committee consists of three members each from the State Medical Society, the College of Medicine, and the Extension Division of the State University, the last named assuming the responsibility for the conduct of the course after a general plan has been adopted.

The College of Medicine of the State University of Iowa has provided the teaching personnel out of its regular instructional force. This demand has been heavy when a course has been given by one individual who must absent himself from his undergraduate duties for ten consecutive weeks, but recent trials with so-called symposial courses offered by a succession of instructors going out for from one to three weeks each have shown that they are practicable. The teaching is considerably more difficult than undergraduate lecturing, and only those with considerable experience have been utilized. The instructors have received liberal travel allowances but no additional remuneration, a fact which has limited participation by those on a part-time basis. Full-time university departments obviously can handle such consignments with less difficulty since the individuals concerned suffer no financial loss. When part-time instructors are called on, the symposial type of course is most practicable, and has largely obviated the criticisms which would otherwise be inevitable. The continuous course given by a single instructor would seem pedagogically better, but there are few qualified

teachers who can absent themselves from their regular duties for the full period of a course.

In Oklahoma and Wisconsin, where sentiment favors instructors from out of the State, it is customary to offer an honorarium which will more than cover actual traveling expenses. Under such circumstances the individual cost to the participants is higher, even though the expense of organization and promotion by the Extension Division is borne by the regular appropriation and not by registration fees.

The courses are commonly self-supporting, each registrant being charged a fee which varies with the mode of administration. In Iowa, where traveling expenses alone must be met, this has been set at \$10 for ten exercises. Courses have been given in pairs, obstetrics having been grouped with pediatrics and with internal medicine (symposium on cardiovascular disease). An individual may register for one or both courses, but general practitioners are urged to take both. This procedure reduces the cost to the class, besides making available to the group four hours of concentrated instruction each week. The Speakers Bureau Committee makes collections from the registrants through the local committee and reimburses the instructors.

In each center, the afternoon period from 5 to 7 o'clock has been occupied by one course, after which the entire group has dinner together before starting the second two-hour class period. The opportunity for mingling at the dinner hour has been much appreciated, especially by doctors from the smaller towns, and has had a decidedly beneficial effect on the morale and understanding of the group. It has been customary to have a ten-minute intermission at a convenient point near the middle of each two-hour talk.

In other States where the work has been attempted, the course in obstetrics has been given alone, and no attention has been given to promoting social intercourse among the class members. It is felt that this part of the Iowa program is especially desirable.

For the single course of ten lectures in Oklahoma the fee was \$35, while in Wisconsin for twelve weeks the charge was \$30. In these latter states, instructors from outside the state were employed.

The material presented is quite different from that used in undergraduate instruction, greater stress being laid on diagnosis and treatment and little or none on the interesting scientific aspects of the subjects under discussion. Slides and moving pictures are employed wher-

ever practicable, and black-board drawings are used frequently. In one course an obstetric manikin was utilized, but the size and weight of this piece of equipment militates against its use. Clinics have been attempted but have so generally failed that they can not be recommended.

Plan for Twenty Hour Course

A typical ten period (twenty hour) outline would include:

1. Contraception and sterilization. Management of normal pregnancy. Antepartum care.
2. Disease complications of pregnancy.
3. Management of normal labor.
4. Management of the normal puerperium. Minor puerperal complications. Abortion, miscarriage, and premature labor.
5. Puerperal infection.
6. The pregnancy toxemias.
7. Antepartum, postpartum and puerperal hemorrhage.
8. Fetal and neonatal asphyxia. Forceps application.
9. Birth injuries. Breech extraction. Version.
10. Contracted pelvis. Cesarean section.

No very serious attempt is made to limit the lectures and demonstrations according to the outline, since it has been found that the method of presentation will unconsciously vary from group to group.

Bound multigraphed notes of the lectures are usually prepared and distributed to class members without additional expense or for a small price to cover the cost.

This plan for carrying the message of better medical practice to physicians in or near their home communities has the great advantage of economy of time, money, and effort, and is certain to be adopted more widely. It is rare that practice can not be arranged to permit a few hours absence once each week. In Wisconsin, among 116 registrants, the average attendance was 88 per cent. The actual expense, as compared with that involved in even a short visit to a large medical center, where there would be little probability of obtaining more practical, useful information in condensed form, is quite negligible. And, moreover, the physician can easily keep in touch with his practice by telephone, and can answer emergency calls with reasonable promptness. Both the pediatric and obstetric sections of the White House Conference agreed that the procedure is worthy of sustained trial, and felt that, from the progress already achieved, success could be prophesied.

The method of administration is felt to be important, and I am convinced that an intimate linkage with organized medicine through the state medical society is advisable, since it gives that large group an

interest in medical education, which otherwise is lacking. State supported medical schools are, perhaps, better situated to offer the essential cooperation, but there is no apparent reason why privately endowed institutions should not participate. The authorities in our medical colleges should easily be aroused to the opportunity for real service offered by this program, which will continue their influence for good far beyond the usual four year medical course. It is a step in advance and should be fostered. The Iowa plan of organization and promotion has much to recommend it.

Postgraduate Obstetric Instruction*

JAMES R. McCORD

Emory University School of Medicine, Atlanta, Georgia

Maternal mortality and morbidity in the United States are inex-
cusably high. It is probable that a large part of the responsibility for
present conditions can be put on the medical schools, past and present.

It is my impression that the average doctor, after graduation, im-
proves less in obstetrics than in any other major subject in medicine.
The reasons for this, in the main, are two: he knows so little of the
fundamentals and the practice of the art that he does not appreciate
his need, and if he did, there are but few places to which he might go
for practical improvement. Most medical schools are not living up to
their obligations in providing postgraduate instruction for their gradu-
ates; this is particularly true in obstetrics. The Committee of the White
House Conference on Obstetric Education of Physicians found that
only seventeen out of fifty-seven schools were making any effort to give
postgraduate instruction in obstetrics.

It is a dangerous thing to say that present knowledge of a subject
is sufficient, but it is true that the present knowledge of the art and
science of obstetrics is sufficient for a vast improvement in present con-
ditions. A large majority of the physicians who are doing the cross
section of obstetrics in this country have had absolutely no instruction
in the subject since graduation, one to fifty years ago.

The economic status of the average rural doctor plays almost as big
a part in this lack of postgraduate instruction in obstetrics, as the lack
of facilities for such instruction.

Obviously, there is but one thing to do at the present time and that
is to take such information and instruction to him. This, Emory Uni-
versity has been doing in Georgia, Florida, Kentucky and Mississippi.
Every expense for the work has been defrayed by the Children's Bureau
of the Department of Labor in Washington and the American Social
Hygiene Association of New York. Similar work has been done and
is being done in other states, but in so far as I know, our work is unique
because it costs the physician absolutely nothing.

The contacts are made through the State Board of Health and with
the consent of the State Medical Association. Either District or
County Medical Societies are asked if they wish the work. The pub-
licity is done by the Health Department of the state, with a franking
privilege as a special agent of the Children's Bureau. As a rule, three

*Read before the Forty-second Annual Meeting of the Association of American Medical Colleges, held in New Orleans, Nov. 30, Dec. 1 and 2, 1931.

letters are sent to each physician in and around the community in which the work is to be done. The time, in most instances, has been from 2 until 5 in the afternoon. A few times this has been changed to an evening hour, at the request of local physicians. Whenever this has been done, it has seriously interfered with the attendance of out-of-town physicians.¹

In Georgia, every physician in the Congressional district in which the work was to be given was invited to attend. The distances these men lived from the place the course was given, was often 75 to 100 miles. Many physicians to whom invitations were sent were specialists in other fields of medicine. Some could not attend because of bad roads. The percentage of physicians attending (to whom invitations were sent) in eight places in Georgia were as follows: 32, 35, 36, 29, 29, 17, 35 and 32, respectively.

The usual course is as follows:

MONDAY: A general talk is given on the mechanism and management of normal labor, both being carried along together. Only orthodox fundamental principles are given; conservatism and patience are urged. No hobbies are ridden. The management of the puerperium is considered. The care of the new-born is briefly discussed. The talk is illustrated by a foetus, lantern slides and a moving picture of a normal spontaneous delivery (DeLee). As a matter of general interest and aseptic technique, a three reel film of face presentation (DeLee) is shown.

TUESDAY: The afternoon is opened with a talk on prenatal care, particularly as it concerns the prevention of the toxæmias of pregnancy. Pre-eclamptic toxæmia and eclampsia are discussed. A plea is made for the conservative treatment of the diseases. General operative interference is discouraged. Chronic nephritis and hypertension, as complications of pregnancy, are discussed in detail. There follows a brief discussion of the vomiting of early pregnancy. The afternoon is closed with a three reel moving picture illustrating the various types of the toxæmias (DeLee).

WEDNESDAY: The prophylaxis and pathology of puerperal sepsis are discussed at length. The fact that there is no curative treatment is emphasized. Syphilis as a complication of pregnancy is discussed. The prevention of congenital syphilis is discussed in detail and illustrated with numerous lantern slides. The afternoon closes with a four reel picture on the forceps operation (DeLee).

1. At the time this was written, Sept. 1, 1930, I had given thirty-eight of these courses. They were attended by 1,283 physicians, an average attendance of thirty-six at each course.

THURSDAY: Forceps, versions, occiput posterior positions and breech presentations are given. Fundamental principles are stressed; details are not attempted. A two reel film on breech presentations (DeLee) is shown, and a one reel picture on internal podalic version (Jefferson Medical College) closes the afternoon.

FRIDAY: Abortions, accidental separation of the placenta and placenta previa are studied. Great emphasis is stressed on the conservative treatment of abortions. A plea is made that hemorrhage cases not be delivered while in shock.

Frank discussions are invited and many questions are usually asked. I have gradually formed the opinion that no one except graduate physicians should be allowed to attend. Nurses and wives of interested physicians limit the discussion.

What are some of the impressions I have gained from two and one-half years of such work? To insure permanent improvement in the practice of obstetrics, education of the laity must go hand in hand with the education of the physician. Patients and their families are often the cause of bad obstetrics. The fear of the criticism of the community and the competition of his colleagues often cause the doctor to do bad obstetrics against his better judgment.

Men of wide influence in the obstetric world should be careful of the dissemination of more or less radical procedures, and because of their environment, be led into championing procedures that are not generally safe and sound.

It is probably true that the men in a community who are doing the poorest obstetric work do not attend. The most efficient men are always faithful in their attendance.

Doctors, as other human beings, are often creatures of their environment. The longer the doctor has been a victim of a poor environment, the harder it is to convince or change him. In many cases, it is absolutely impossible. An overwhelming majority of the physicians who are actually doing the bulk of obstetrics have had no instruction in the subject since graduation. The statement that good obstetrics cannot be practiced in the country, has been worn thread-bare.

The lack of a fundamental training in the principles and practice of Obstetrics should not be the excuse for a total lack of obstetric equipment.

I wish some doctors could be convinced that the detail man is not a safe and sound practitioner of medicine.

Obstetric mortality will never be permanently improved until medical schools consistently graduate men who know the fundamentals or

the obstetric art. This can not be done didactically or with manikin manipulation. Students must have a large, workable contact with obstetric cases. Facilities must be provided for an adequate number of student deliveries under competent supervision. It is my opinion and experience that most outdoor obstetric services are liabilities rather than assets. Such services are rarely adequately supervised—and faulty technique and erroneous thinking, acquired by the student at this time, is an unconscious handicap during his obstetric career.

Discussion

On the Papers of Drs. McCord, Plass and Adair

DR. J. M. H. ROWLAND (University of Maryland) Baltimore: These papers are most interesting and most important. Every word in Dr. Adair's report is true, and what these gentlemen have said about postgraduate opportunities should have earnest consideration.

Dr. McCord and Dr. Plass have outlined a fairly complete system of post-graduate obstetric teaching. We have not done so well in Maryland. The extramural work in this department that has been done in our state has been largely under the supervision of two bodies: The Bureau of Child Hygiene and the Obstetric Department of the University. This work has been given in various parts of the state, chiefly in the larger towns. Ours is a small state, geographically, and most of these towns can be reached fairly easily with an automobile on any one day, so that it is not difficult to reach most parts of it.

The work we have done consists chiefly of a series of six lectures repeated in the various centers, and covered the subjects of prenatal care, the conduct of labor, the conduct of the puerperium, the treatment of the newborn, pathologic pregnancy with special emphasis laid upon toxemia and hemorrhage, and reference to operative obstetrics.

This was done for some years and throughout most sections of the state; and we found what others have found, that the men who attended these meetings, which were organized to improve the situation in rural districts or in smaller centers, were the best men of the community and were, we believe, improved; but the poorer men stay away and, of course, receive no benefit.

I would like to emphasize some points. The first is that of the 15,000 deaths which Dr. Adair talks about in women and the 160,000 deaths among the newborn and the children in the first two weeks of life, the vast majority can be prevented; and much of the morbidity which happens later in life, both in children and in mothers, can be prevented if we can get the medical profession, particularly the general practitioners, to teach and observe the simple principles of prenatal care, with special reference to toxemia and hemorrhage. A second point is the observance of absolute cleanliness in the conduct of labor. Every delivery should be regarded in the same light as a surgical operation.

A third point that should be emphasized is intelligent, watchful waiting, and you will note that I say "intelligent" watchful waiting, because the intelligence may actually be more important than the waiting. Just waiting may be as bad as too much hurrying, but the intelligent, watchful waiting which allows a man to interfere when he ought to, and only when he ought to, is a very

important matter. These three things—and how easily they are taught and how easy they are to learn and to practice—would eliminate more than 60 or 70 per cent of all the mortality resulting from pregnancy and childbirth and much of the mortality among children.

Dr. Adair's conclusions were twelve in number but in my opinion he left out another which is most important. All of his conclusions were correct, but I believe they do not go quite far enough. The laity are indifferent. They have been taught to be indifferent or allowed to be indifferent—as you please—by a group of men who were indifferently taught many years ago and by men who are still, perhaps, inefficiently taught. The difficulty is that no matter what attempts you make, no matter how hard you try or how much extramural obstetrics you teach, you are never going to get obstetrics practiced properly until you get the laity taught properly. There must be some reputable way, under the proper auspices, to bring this knowledge to the laity themselves.

Somebody said, some time or other, that every man was just as lazy as his conscience permitted him to be. It seems to me that some of us in the medical profession, particularly in the matter of prenatal care, have no conscience.

The minute the people of a community demand good service, they are bound to get it; and some means must be taken to prepare the community in this business, in addition to the influence of the community physician. The method of leaving the matter in the hands of the community physician has been tried and found wanting.

Teaching is still imperfect, and no school, probably, prepares its men to properly manage all the complications of childbirth. Few of us ever learn all about it, but every school is prepared to teach good prenatal care, intelligent watchful waiting and cleanliness; and each of our schools should be willing and able to bring to that part of the community for whose welfare it is responsible a knowledge of the obstetric service each individual needs and should have; and when this responsibility is assumed by the medical schools, maternal and child mortality and morbidity will greatly diminish.

Research in Graduate Medical Schools*

LOUIS B. WILSON

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Advanced training in the practice of medicine, whether in nonclinical or in clinical fields, is beyond question the principal purpose of the graduate medical school. Superior knowledge of the known facts of medical science and adequate experience in the art of applying those facts to the diagnosis and treatment of disease are fundamental to the perpetuation of the high service now rendered by the medical profession. But if the medical profession is to acquire new truths to be used by the practitioner of medicine, research into unknown fields must be one of its definite objects. Realization of the importance of research has already brought the medical profession to the forefront of all learned professions during the last half century. But as one considers the present status of medical research, he is impressed by several serious needs. The first of these, resulting paradoxically from the widespread advance already made, is the increasing myriads of important problems demanding study. Proud as we are of our past achievements, we must recognize that only narrow trails have been hewn out here and there in the wilderness of undiscovered truths related to medicine. Most completed researches expose the need for several more. One needs only to think of our ignorance in relation to some of the great diseases of mankind, such as cancer, cardiac affections, and insanity, to realize the need for further intensive research.

Equipment of Medical Schools for Research

Another striking factor of the present status of research is the inadequate equipment of medical graduates in research methods. This again is due in large measure fundamentally to the success of researches already completed. These have yielded so many new facts that the medical students' time in medical school has become all too short for their adequate comprehension. Perhaps in our medical faculties too little attention has been given to sorting out the small body of important truth from the great mass of relatively unimportant truth.

The lack of interest and experience in research among medical graduates apparently arises from the lack of interest and experience in research among members of medical school faculties. This, in turn, arises from the method of training faculty personnel after graduation. The graduate medical student without experience in research goes from his

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medical school to a hospital, and thence back again to the instructional staff of the medical school. Usually, he must devote so much time to earning his living that he cannot, even if he has the desire and the training, engage in research. He will not struggle for the research opportunities so scantily available in connection with the medical school. As he progresses in his clinical work, he is promoted to the faculty, with, possibly, only "a favorable attitude" toward research. As a result our clinical faculties are made up in large measure of men without adequate training or experience in research. In this respect being themselves sterile so far as the advancement of medical knowledge is concerned, they transmit their sterility to their students. The vicious cycle thus closed repeats itself over and over again. Even those who attempt, after becoming successful clinicians, to engage in serious research are gravely handicapped by their lack of early training.

For the most part the serious research accomplished in medical fields has been done by the rare individuals who have been so fortunately placed that they could take advantage of the opportunities for experience in research methods while engaged in premedical or in preclinical fields. Such men sometimes have carried their interest in research and their skill in research into clinical fields when later engaged therein. Research work by those who are either undergraduates in arts or undergraduates in medicine has yielded excellent results. Neither college of science nor medical school can afford not to encourage such work among its students even though apparently to the delay of the completion of the professional curriculum.

Value of Research to Practitioner

The medical graduate who has had an adequate introduction to the practice of clinical medicine through one or two years of graduate hospital service, and who, by reason of his superior native ability or training, may reasonably be expected at some time in his career to become a member of the teaching faculty of a medical school, can, of course, obtain his advanced training in clinical medicine by further hospital experience, private practice, or association with a skilled practitioner. He also may add to any of these experiences clinical training in the postgraduate schools. But if, as I believe to be desirable, he is to develop not only into a good practitioner of his chosen field of medicine but also as a teacher and research worker in that field, he should find his best opportunity for training and experience in research work in the graduate medical school.

Research in Preclinical Fields

For the man who is fitting himself for teaching and laboratory work in the fundamental medical sciences, it is a simple matter to provide op-

portunities for research work in the laboratories of his major field. It should not be assumed, however, that because he is training himself to be a pathologist, for example, that all of his research work should concern itself with abnormal processes and conditions. His investigations may and almost certainly must lead him more deeply into those phases of anatomy, physiology and physiologic chemistry which support his major field than he has been able adequately to study in his medical course. So important is this, that I cannot understand how a graduate medical school can give adequate opportunity for research work without superior equipment and faculty personnel for research in all of the fundamental medical sciences.

Research in Clinical Specialties

However, it is in the field of clinical medicine and surgery, particularly in the clinical specialties, that our greatest difficulty arises in providing opportunity and inspiration for the graduate medical student to engage in serious research. As has been previously suggested, the clinicians of the faculty often have little if any conception of the implications of research in clinical medicine. Too frequently they regard it as implying only the summarizing of clinical data contained in groups of clinical histories or the critical resurvey of all previous knowledge concerning some clinical problem with the hope of determining new relations of old truths. I would not discourage in the least either of these forms of research. Such historical, statistical or critical reviews do much to educate the worker and occasionally result in better concepts of the origin, nature or treatment of some disease. But such research can never hope to solve the more complicated problems of medicine involving as they do a better knowledge of the physics, chemistry or biology of disease processes.

Responsibility for Research

Frequently we hear the suggestion that all serious research in clinical medicine is, after all, but research in one or more of the fundamental medical sciences. Why not leave, then, the direction of our research in medical science to the physicist, the anatomist, the chemist, the pathologist, or the bacteriologist? That, I fear, is just what we are forced to do in large measure at present because the clinical members of our faculties are not interested in the probably necessary extensions into several of the medical sciences of almost every serious clinical research. On the most casual consideration it is immediately apparent that the ideal man to inspire and direct research in clinical fields is the clinician who is so good a clinician that his knowledge of the problem involved at once suggests to him its ramifications into physics, chemistry, anatomy, physiology, and pathology. I venture to say that every busy practitioner of a clinical

specialty is confronted at least once a week in his practice with a problem, the solution of which might greatly benefit future patients and yet which he has neither the time nor the research experience to attack. May we not expect men in our graduate faculties to consider such problems in all their possible ramifications, consult with the heads of those departments whose services may be called on in the solution of the problems and secure the cooperation of all in assisting the work of a graduate student who may be interested, by the clinical chief, in the problem under consideration? This is the sort of clinical research in the graduate school that we most need and of which we have so little.

Success in Research

We not infrequently hear the suggestion that we can hope to have successful research accomplished only by the few geniuses whom nature has endowed from birth with those rare attributes of superior imagination, industry and judgment. I am wondering if outstanding success in scientific research is at present less common than was outstanding success in the practice of medicine in the United States, say, forty years ago. There is no question that the quality of medical practice by the majority of the practitioners of the United States has been elevated during the last forty years quite to the level of that of the small minority of superior practitioners in the United States prior to forty years ago. This is the direct outcome of the improved opportunities for study in our medical schools. Is it not possible that with like improvement in opportunities for research in our medical schools and graduate medical schools we might find that success in research would not be limited to those who, under the present regime, are successful in research in spite of present methods?

Research by Undergraduates

In some medical schools undergraduates now have opportunities for original investigation. I would suggest a very great extension of these opportunities. I would further suggest that the original investigations of undergraduates for the most part should be confined to the fundamental medical sciences; physiology, chemistry, pathology, bacteriology, biology, pharmacology. Research in problems involving clinical judgment, it would seem, might well be omitted until instruction in clinical theory and until clinical experience in the hospital have been attained.

Research in Graduate School

In the graduate medical school every student worthy of training should be expected voluntarily to seize an opportunity for some form of research directly related to his field of major interest. I believe that as graduate medical schools develop they will come to be the principle source of personnel for faculties of medical schools. Logically then they

should be the testing ground as well as the training ground for superior practitioners of medicine, superior research workers without clinical interests and most of all, superior clinicians with superior research experience.

Besides research in medical science I would suggest for the graduate medical student research in other fields more distantly related to medicine. I refer not especially to related natural sciences but to related humanities. There has been a tendency in the intensive medical curriculum in the last twenty years to concentrate the attention of the medical student on the field of medicine alone. I fear that the medical profession, because of this concentration, has lost some of its sociologic consciousness. I heard a great historian and sociologist remark not long ago that from his contacts with the medical profession he was inclined to believe that its members were the least socially minded of any group of educated men.

Research in Medical History

Many medical schools are attempting to combat this narrowness of culture by providing opportunity for the study of medical history. In most instances, however, these opportunities are confined purely to informational courses. Perhaps, this is proper in the medical school, but the graduate medical student it would seem might be given opportunity to engage in research in medical history. Where this is undertaken it must be recognized that the methods of research in history, sociology, philosophy, and economics, are different from those in the natural sciences. In the latter new forces, new truths, new principles are sought; in the former old truths, old reactions, old philosophies are brought together to give a better understanding of society of the past, of the present, and of the future. It is possible that the members of the medical profession would not be so radically at variance in their ideas of many of the great sociologic problems of medicine today if they knew and could apply their knowledge of the social relationships of medicine in the past to the solutions of the problems of the present.

Research in Social Sciences

I am suggesting research in the social sciences for the graduate medical student beginning with investigation of stages of the development of medicine in relation to the development of civilization of succeeding periods, for the betterment of the physician's social sense that he may become a better citizen, and that other good citizens will have a higher opinion of his social judgments as well as of his professional judgments. I cannot help believing, however, that along this line lies the road to his broader and more catholic sympathy with other scholarly disciplines.

which is a characteristic if not the most significant mark of a cultured man.

My whole plea is that although the graduate medical school must provide opportunity for the best vocational training it will fall far short of its proper function unless it provides also opportunities for research in the science of medicine and in the sociologic relationships of medicine.

Discussion

DR. G. CANBY ROBINSON (Cornell University Medical College) New York City: I agree heartily with everything Dr. Wilson has said. If we are to further the progress of medicine we must provide facilities and encouragement in the whole field of medical research, including the clinical fields.

There is one point I would like to stress, and that is the importance of attempting to put medical colleges on a true university basis and to encourage research activities in all departments of the college rather than separating the advanced work into graduate schools. This is a very large question. We are considering only one section of it, and I wish to advocate the idea that in the clinical fields, as well as in other departments, we should attempt to have a true university spirit where advanced study may be carried on by young graduates in medicine.

When I was an undergraduate student in the collegiate department of Johns Hopkins, the graduate students and the undergraduate students were thrown together quite closely. It seemed to me then that the influence of the graduate student on the undergraduate was a real one. We had classes, laboratory work, and various other activities together.

I think the same principle ought to follow in our medical schools, namely, that we should have facilities and opportunities for advanced graduate students in all the departments of the medical schools. At Cornell we have formulated the principle of a relatively small undergraduate body and a relatively large group of graduate students, the nucleus of which would be, in the clinical fields, the resident staff of the hospital. We have housing facilities for over 100 residents in the hospital which will constitute, we hope, a group of graduate students, and we believe this group will have a very definite influence on the undergraduate students.

I am sure that whatever method is used, unless we can get the spirit of research into at least a fairly large proportion of men who are going into clinical medicine there will continue to be innumerable problems that will remain unattacked in this country.

DR. MAURICE H. REES (University of Colorado) Denver: I was interested in what Dr. Wilson said regarding the research work to be done in the pre-clinical departments. I heard the statement made last summer at a scientific meeting that there are already enough scientific discoveries in chemistry and physics, physiology, etc., to keep the clinical departments busy for a period of ten years in making application of those things that have already been discovered. It is possible that we will have to use our preclinical departments to a greater extent in making those applications.

Cooperation Between the College of Medicine of the State University and Other State Departments in Illinois*

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During Governor Lowden's regimen in Illinois, which began in 1916 and terminated in 1920, Charles H. Thorne was director of the Department of Public Welfare and Edmund J. James was president of the University of Illinois. It became evident to the Department that not only was there need of higher standards of medical service in the various state hospitals and institutions under its care but that something should be done, if possible, to prevent the ever increasing stream of human unfortunates entering the hospitals for the insane, penal institutions and other state hospitals. To do this, Mr. Thorne turned to the State University. The College of Physicians and Surgeons of Chicago shortly before this time (1913) had been incorporated into the University, and, under President James, was being reorganized on a University basis. A clinical hospital was needed and the legislature had appropriated \$300,000 for such an institution to house general hospital patients for teaching and research purposes.

Since the Department of Public Welfare was already in possession of various state hospitals housing patients in the specialties, it was natural that Mr. Thorne should approach the University and seek cooperation through the education of students, physicians, nurses, attendants, etc., and especially to conduct studies in the prevention of those diseases that were filling the state hospitals to overflowing.

The work of these two state institutions seemed to Mr. Thorne and to President James to be complementary. Mr. Thorne at that time made the following statement: "Upon entering the State service in 1917 without knowledge of the subject I found that the thing which most impressed me was the fact that the state was engaged in giving custodial care and incidental treatment to terminal cases and was not doing anything worth while along the line of research and had no ideas apparent upon the subject of preventive treatment."¹ Then, he exclaimed "Why hasn't the State conducted research for humans the same as it has for hogs? I think the answer is that research on hogs has been conducted by the University whereas research on humans has been

*Read at the Forty-second Annual Meeting of the Association of American Medical Colleges held at New Orleans Nov. 30, Dec. 1 and 2, 1931.

1. *The Modern Hospital*, 1920, Vol. 15, p. 450.

attempted by an administrative department which is not fitted to do so."

A further study of the problem at that time made it obvious that the Department needed the laboratories, libraries and personnel of the University as well as the clinical building which the University was about to erect. The University, on the other hand, needed the special hospitals which the Department was erecting or already possessed. Furthermore, the Department could provide a site for many of these buildings. The function of the University was preeminently that of education and investigation. The Department was especially well qualified to undertake construction and maintenance of the buildings. This arrangement would relieve the University of large administrative duties and might make available funds for upkeep which it could scarcely hope to obtain otherwise.

Thus, these two state medical agencies which heretofore had worked independently, and in many ways duplicated each other's work, appreciated the mutual advantage of consolidation and differentiation. This arrangement would affect a great saving for each institution and, consequently, for the tax payers of the state. It would also assure the public that the best medical and surgical skill would be available for the sick poor of the state. The work of this group would not in any way interfere with practising physicians. Its purpose would be to supplement rather than duplicate the work of the practitioners.

This cooperative scheme between the University and the Department was agreed upon with the following objectives in view: to construct and maintain a group of hospitals and institutes in the medical center of Chicago; to provide medical treatment for the indigent sick of the state; to give medical education and training to students; to help practising physicians of the state to keep in touch with the latest and best methods of preventing and curing disease; to tell the people of the state how to keep themselves physically fit; to discover and check at their sources the supply of human wreckage overflowing hospitals, asylums and prisons of the state.²

July 5, 1919, a formal agreement was entered into and the document was signed by representatives of the State Department of Public Welfare and of the University. It was adopted by the Board of Trustees of the University and printed in the Proceedings of the Board, July 12, 1919, as follows:

"This Agreement, made the fifth day of July, 1919, by and between the University of Illinois, party of the first part (hereinafter designated as University), and the Department of Public Welfare of the State of Illinois, party of the second part (hereinafter designated as the Department)

WITNESSETH, that the said parties agree to the following for lo-

2. *The Modern Hospital*, 1920, Vol. 15, p. 449.

cating, erecting buildings and permanent improvements, equipping, maintaining, and operating a group of hospitals in the city of Chicago designated as the Illinois Charitable Eye and Ear Infirmary, the State Psychiatric Institute, the Illinois Surgical Institute for Children, the State Institute for Juvenile Research, the University Clinical Institute, and such other hospitals or institutions as may hereafter be agreed upon:

ARTICLE I. The purposes of each hospital or unit mentioned in this Agreement are described as follows:

The Illinois Charitable Eye and Ear Infirmary is to provide medical and surgical treatment for all indigent resident of Illinois who are afflicted with diseases of the eye, ear, nose or throat.

The State Psychiatric Institute is for the study of the nature and treatment of mental disorders.

The Illinois Surgical Institute for Children is to furnish to indigent children, resident of Illinois, who are physically deformed, treatment, training, nursing and education.

The State Institute for Juvenile Research is to provide for the study of the nature and treatment of behavior difficulties in minors.

The University Clinical Institute is for the study of the causation, prevention, alleviation and cure of disease.

ARTICLE II. No officer nor employee under the control of parties hereto shall make a charge for medical or surgical treatment, care, nursing, or maintaining any patient in these hospitals or units, provided that this shall not be construed to prohibit members of the professional staff of the University from engaging in consulting practice under such conditions as may be prescribed by the University.

ARTICLE III. The administration and executive direction of the hospitals mentioned herein shall be in the Department. It is agreed by both parties that the definition of the words "administration and executive direction" is: The management of the buildings and property, the control of all business transactions in connection with the work of these hospitals which includes the employment of all officers and employees, providing for the purchase of and issuance of all supplies and equipment, excepting the equipment and supplies mentioned herein which are to be furnished by the University, assigning space in the buildings for the different hospitals and divisions, with the advice and consent of the University, sole authority as to the admission, transfer, or discharge of patients, providing maintenance for officers, employees, and patients, supervising building construction, controlling the mechanical department, furnishing nurses and attendants to the medical department, and stenographic or other help which may be needed in the various hospitals, excepting the University assistants that are referred to in this agreement; it also includes the superintendence, oversight, and management of all officers and employees other than the officers and employees furnished by the University. The Department will purchase the ground and construct and repair buildings for said institutions. The Department shall make rules for the operation and maintenance of the hospitals or units.

ARTICLE IV. The University through its College of Medicine shall have the use of the clinical facilities of said hospitals for teaching purposes and research work. It is agreed that in connection with the "use of clinical facilities of said hospitals for teaching purposes and research work" the University shall provide all equipment and supplies, laboratory apparatus, libraries, etc., for educational and research purposes.

The University shall appoint and control the professional staff of the hospitals, physicians, surgeons, interns, laboratory technicians, librarians, and assistants for the treatment of patients and for teaching and research purposes. It shall control the work of nurses, ward attendants, and all other in so far as this work is strictly medical.

The University shall provide courses of instruction in medical

and allied subjects for workers in the Department, such as training schools for nurses, occupational therapists, social workers, dietitians, and others as may from time to time be agreed upon between the contracting parties.

ARTICLE V. The chief administrative and executive officer for all of the units in the group will be designated as Managing Officer. Each unit of the group will be under the immediate direction of an Assistant Managing Officer.

ARTICLE VI. The University shall place at the disposal of the Department all funds appropriated for the erection of the University Clinical Institute, to be applied to the purpose for which they were appropriated.

The University shall consult with and advise the Department and the Department shall also consult with the University as to the needs of the University for teaching and research facilities in the buildings erected or to be erected.

Until specific appropriations are made, the University shall pay clerks and others now in the employ of the University who shall hereafter be under the direction of the Department in accordance with the terms of this agreement.

Until specific appropriations are made, the Department will pay professional workers now employed by the Department who shall hereafter be under the direction of the University in accordance with the terms of this agreement.

ARTICLE VII. Maintenance shall be allowed only to officers and employees who are required to be residents of the institutions or units. Requirements for residence shall be determined by conference between the contracting parties.

ARTICLE VIII. To facilitate harmonious cooperation between the contracting parties there shall be established a standing committee of four—two to be appointed by the Director of Public Welfare and two by the President of the University to which, at the request of the Managing Officer of the Hospitals or of the Dean of the College of Medicine, may be referred any matters upon which there may be doubt or dispute. The findings of the committee shall be binding upon both parties. Matters upon which this committee cannot agree shall be referred to the Director of the Department and the President of the University in conference.

ARTICLE IX. In case the parties hereto shall fail to agree in relation to the interpretation of this agreement, then upon presentation of a statement in writing, signed by either party, to the effect that there is such a disagreement, and if the arbitration method of settlement is approved by the Governor of the State of Illinois, then the matter shall be referred to a board of arbitration consisting of three members, one member to be selected by each of the parties and the third member to be named by the Governor. The decision of any two members of the board shall be final and binding upon both parties hereto.

ARTICLE X. Modifications of the terms and conditions of this agreement desired may be proposed in writing at any time by either of the parties hereto, and when these changes are accepted in writing by both parties they shall become a part of this agreement.

ARTICLE XI. This agreement is contingent upon the general assembly making the appropriations available for the purposes described above, otherwise the agreement is to be null and void.

Upon the basis of this agreement the Legislature at that time promptly appropriated the money necessary to purchase the old West Side Ball Park and to erect the buildings needed by the Department and to build the Clinical Hospital required by the University. The legislators were quick to see the advantages of this group scheme and to

give it their approval by appropriations with the understanding that it was committing the State to a project involving millions of dollars additional. At that time Mr. Thorne made the following statement: "It is my hope that this group will eventually be developed to include large, adequate, and as nearly perfect laboratories as can be devised, the university medical library, a contagious disease hospital, an orthopedic hospital for adults, a children's hospital, a woman's hospital, and such other units as may be required for the complete study of the human body and its functions, for the teaching of medicine and surgery and for the training of nurses, attendants, social workers, occupational therapists, dietitians, and other specialists needed in the state charitable, penal and correctional services, and by other public and private ventures."³

All this happened more than twelve years ago, and to many it has become largely a matter of history. It is my purpose now to tell briefly what has transpired since that time. Under this and the succeeding administrations the buildings, including the general Clinical Hospital, the Psychiatric Institute, the Orthopedic Institute, the Institute for Juvenile Research, the University Laboratory and Library Buildings and the Nurses' Home have been completed on the old baseball park site. The only exception has been the Illinois Eye and Ear Infirmary which has remained at the original site on Adams Street.

In 1923, the Outpatient Department of the College of Medicine was moved into its present quarters on the first floor of the new general hospital from the old building on Honore Street, and in 1924 patients were first admitted to the general hospital. The process of occupying the hospital has been at times retarded temporarily owing to the difficulty in making adjustments. On the whole, however, progress has been continued without serious interruption up to the present.

In 1927, a new nurses' home was erected by the Department and occupied the following year. A new building for the Institute for Juvenile Research was completed and occupied in 1930. The Service Building has been enlarged and plans for a new employees' building have been completed. Two years ago the University received an appropriation of \$1,500,000 from the legislature for a Medical and Dental Laboratory Building. This was completed and occupied in October, 1931. It houses the Departments of Anatomy, Physiology, Biochemistry, Pharmacology, and an addition to the Library, the administrative and business offices and furnishes some additional space for Dispensary and clinic rooms. This last year the Legislature further appropriated \$1,400,000 for additional University buildings to house the Departments

³. *The Modern Hospital*, 1920, Vol. 15, p. 451.

groups of Pathology, Bacteriology, Public Health, Hospital Laboratories, an additional X-ray unit, the College of Dentistry and an assembly hall to accommodate about 1,200 persons and which may be used also for conducting examinations and for museum purposes. The plans for these new buildings are now approximately complete.

At the present time there are 200 patients in the General Hospital, 85 in the Orthopedic Institute and 65 in the Psychiatric Institute, a total of 350. All are selected for teaching and research and all are charity cases. They enter the hospital through the Outpatient Department and come from all parts of the State.

At the time the first agreement was signed in 1919, it was in the minds of those interested to legalize the relationship between the University and the Department of Public Welfare by an enabling act of the Legislature. This was not done at that time owing to the short interval of time existing before the adjournment of the Legislature and a change of administration. This was unfortunate since questions were raised later by some as to the validity of the agreement entered into under the conditions detailed above by the two State institutions. To settle the matter, last year such an enabling act was passed by the Legislature. This was entitled a "Bill for an Act in Relation to the Founding and Operation of Research and Educational Hospitals of the State of Illinois" and reads as follows:

Be it enacted by the People of the State of Illinois, represented in the General Assembly:

Section I. "Department" as used in this act means the Department of Public Welfare; "University" means the Board of Trustees of the University of Illinois and "Research and Educational Hospitals" comprises the University Clinical Institute, the Outpatient Department of the University, the Institute for Juvenile Research, the Illinois Surgical Institute for Children, the Psychiatric Institute and such other hospitals and institutes hereafter created, as may be added thereto by agreement of the Department and the University. The Medical and Dental Colleges of the University of Illinois may be operated in conjunction therewith to such extent as may be deemed practicable and subject to agreement with the University.

Sec. 2. The general management, control and operation of the Research and Educational Hospitals shall be in the Department and the University. In general the Department may have the administration and the University the research, educational and professional activities. The Department and the University may by agreement make general rules for the operation and maintenance of the Research and Educational Hospitals. Such rules shall be binding upon the Department and the University until modified by mutual agreement.

Sec. 3. The Department and the University may, by agreement, provide for a managing officer for the Research and Educational Hospitals and prescribe his duties and compensation. If provision be made for him, he shall be appointed by the Department on the nomination of the University.

Sec. 4. The University may make expenditures for buildings and other improvements from appropriations made to it, which buildings and improvements are upon land the control and legal title to

which is in the State of Illinois rather than in the University. Control of buildings erected on such land shall be in the University.

Gifts for the Research and Educational Hospitals may be received and shall be administered in accordance with the terms of the gift.

Sec. 5. The rules made by the Department and University may fix charges or fees in connection with services rendered, but no person shall make or collect a personal or professional charge for his own compensation for treating, caring for or nursing a patient in the Research and Educational Hospitals.

This Bill, it will be noted, provides for the joint control and operation of the hospitals by the Department and the University, the former to be responsible for the administration activities and the University for the research, educational and professional activities. It also legalizes certain rules and regulations entered into between the two parties which shall be binding until modified by mutual agreement. An important provision is the one relating to the appointment of the managing officer who will be nominated by the University and appointed by the Department. The Act also permits the University to erect, control and maintain its own buildings on property whose legal title is in the State of Illinois rather than in the University.

Provision also is made to change by mutual agreement from time to time, with changing conditions and requirements, the rules for the operation and maintenance of the hospitals and for the creation of new units or hospitals. Taking advantage of this provision in the Act, another agreement was recently drawn up between the Department and the University defining more clearly certain provisions of the first agreement of 1919 and, in general, clarifying and bringing up to date arrangements and practices which seemed desirable to both parties.⁴

This cooperative plan from the standpoint of the University involves not only Medicine but also Dentistry and Pharmacy. These three colleges of the University are all located in close proximity and in a large sense form a unit whose educational activities are interrelated in a variety of ways. The pharmacy students compound drugs and receive practical dispensary training in the Hospital Drug Room. The dental instruction in the fundamental sciences is given in the same laboratories and by the same teachers as is medical instruction. With the advanced requirements for dentistry, the students in medicine and dentistry may be given the same work in the same class, if desirable. This is not being done at present. The College of Dentistry also is holding clinics in the hospital and caring for the teeth and mouths of the patients. Plans are under way for staffing the state hospitals with dental resi-

^{4.} This document was approved by the Department and the University in March, 1932, and published in the Proceedings of the Board of Trustees of the University of Illinois, April 20, 1932. (Copies of this may be had by writing to the Secretary of the Board of Trustees, University of Illinois, Urbana, Illinois).

dents and interns. More and more, the work of these three colleges is merging and each one is becoming indispensable to the others.

Another state department vitally related to the work of the University is the Department of Health. In Illinois a cordial relationship has existed for years between this Department, the Department of Public Welfare and the University. One of the branch laboratories of the Health Department is located in the Research and Educational Hospital in Chicago. At this laboratory are examined all materials from the northern third of the State, excluding Chicago. It has not been considered necessary to enter into a written agreement between the parties concerned. Each is mutually helpful to the other in a variety of ways.

The advantages of close association between a College of Medicine and a State Health Department are well known. An abundance, as well as a variety, of material from the Health Department becomes available for teaching purposes. This material is often selected and may be of value for intensive studies and research. Health Departments look to Universities for accuracy in standards and for the latest and best scientific information. They must also depend to a considerable degree on universities for educating their personnel. With this close relationship the university is in a far better position to educate not only students in public health but also medical and dental students, and, we may add with emphasis, its own teaching force. Much of the teaching in public health courses in universities and medical colleges not directly connected with health departments is highly artificial and impractical.

Thus is coming to fruition the efforts of the group of men who conceived this project some fifteen years ago. Many of them have now passed out of the picture. The central idea has been one of cooperation between an essentially administrative group and an educational institution with a view to avoid duplication of function and to effect economy. Our experience during this period has now involved three different state administrations. Political departments may be as progressive and forward looking as are the most advanced educational institutions. Progress may be made by the organized cooperative efforts of both parties. By agreement and legal enactment, or otherwise, a reasonably stable and permanent relationship may be established between educational institutions, essentially nonpolitical, and frankly political departments. At times, it is true, progress may be thwarted and valuable work under way may be delayed by a changing administration through the introduction of a new personnel which, through indifference or lack of familiarity with the problems or because of different political affiliations, may

see fit to change the existing system. Permanence and stability are the primary requisites for efficiency and economy in such joint enterprises.

Discussion

DR. W. S. LEATHERS (Vanderbilt University) Nashville, Tenn.: I am particularly interested in some of the points of view developed in this paper. Much emphasis is being placed on the relationship at the present time of medical schools to community and state welfare activities. A medical school with the proper objective in relation to state and community agencies can make a definite contribution in health and welfare work. There is much opportunity for cooperation along this line, and the paper by Doctor Davis is a timely discussion of this important phase of development in relation to medical education.

I am particularly interested in the investigative point of view which is emphasized by him with reference to state departments. I have endeavored to work out a coordinating arrangement between Vanderbilt Medical School and social and health community agencies and also in connection with certain state departments. This has proven very helpful to the medical school and I am sure that these departments have likewise been aided in the work which they are endeavoring to do.

The Department of Preventive Medicine and Public Health of Vanderbilt Medical School has worked out a cooperative plan with the State Health Department for carrying on research work on problems that are of particular interest to the state and which are also of scientific importance broadly speaking. Such a relationship has not been emphasized heretofore between this department of the medical school and state and local health organizations and I wish to emphasize the need for more coordination between not only this department of the medical school but also other departments and state agencies.

The standards of a state health department can be elevated by the assistance of the department of preventive medicine and public health in the medical school. A state university or endowed university can make a contribution in developing the scientific point of view in the administration of state health work which I am sure is of great value in placing the health work of the state upon a higher level of efficiency. The state health department is also too often involved in political entanglements and a university can be of assistance in strengthening it and stabilizing its organization. Such a relationship is in a measure protective and certainly it gives encouragement to those who are endeavoring to prevent and control disease, frequently against opposition and a lack of cooperation on the part of people who should express an intelligent interest in such matters.

The paper of Doctor Davis is very interesting and constructive.

Some Aspects of Medical Education and Nursing Education*

E. P. LYON

Dean of Medical School, University of Minnesota, Minneapolis

It is an honor to be present on this occasion and to congratulate Meharry on these splendid new buildings.

But there is something further, something deeper that may be said. This audience is interested much more in doctors, dentists, nurses and pharmacists than it is in buildings. It recognizes the social and individual necessity of having a well trained health personnel. In other words, this audience is interested in medical education in its broad sense.

Further, you look forward to a time when there shall be still better doctors. You wish them to be better able to alleviate and to cure. In other words, you are interested in research by which new facts and new methods are found out.

In these two intangible things, education and research, you are much more interested, when you come to think about it, than in these piles of brick and stone. It is a pleasure to assert on this spot where our late lamented friend, Dr. George W. Hubbard, labored through self-sacrificing years, that I have every confidence that these buildings will be used worthily in the great cause of education and research. One sees this place through decades, perhaps centuries, as a center of medical progress and medical teaching, a lighthouse whence shall flash guidance to a whole people. It is good to be here and to say these things.

This is the proper time also for reviewing in our minds how such places and such ideals came to be. If the word evolution were permitted in Tennessee, we might ask what has been the evolution of present day theory and methods of training physicians.

Unfortunately, this would be too lengthy a subject for the few minutes at my disposal. Possibly, however, we may profit by a brief review of what has taken place within the lives of men who are here today.

It is generally acknowledged that even thirty years ago medical education in America was ineffectual, poorly supported, ship-wormed in many places with pretense and fraud. Indeed, from 1880 to 1910 was a disgraceful era in medical education.

With notable exceptions, the schools were weak in facilities, faculty

*Read at the Dedication of the new buildings of Meharry Medical College, Nashville, Tenn., Nov. 28, 1931.

and educational standards. At a time when medical science, following Pasteur, was making rapid strides, the medical schools held back. Science laboratories, except in anatomy and chemistry were few, poorly equipped, inadequately staffed. Clinical teaching was mostly didactic. Students had few opportunities for personal contact with patients.

Even in my day I remember hearing of a school in St. Louis that fulfilled a rule of the state examining board by having two obstetric patients delivered before the entire student body. Each student could thereafter certify that he had "participated" in two deliveries!

About 1903, I visited a medical school in Indianapolis whose space requirements were fulfilled by two rooms, perhaps 20 ft. square, over a feed store. In one room was a table, which may at one time have supported a cadaver. In the other room were several chairs and a blackboard. That was the entire physical equipment. Graduates of that school in that year were eligible for registration in nearly all the states.

The entrance requirement in most schools was nominally a high school education. Really it was much lower on account of the almost universal custom of accepting an "equivalent." The schools interpreted the "equivalent" to suit themselves. In some places medical diplomas could be bought outright.

Worst of all there were too many schools. By 1904 there were 162 medical colleges in the United States or half the world's supply.

Result of all this—too many schools, weak entrance and graduation requirements, poor instruction—was that numbers of poorly prepared physicians were turned out. This led to suspicion and criticism of the medical profession on the part of patients and public.

Do not get the idea that all doctors were poor in that period. Of course there were many good ones. I am merely saying that ill prepared men were graduated and went into practice. A few incompetents can do a lot of harm.

Why were there so many schools? The reason is, I think, quite plain. There was money in medical education. Whether profits were declared or not, the schools were adjuncts of the practice of the physicians composing the faculties. Look on it as ingenious advertising if you will—it certainly had that effect, for the graduates were supposed to bring back their difficult cases to their old professors. Some schools, indeed, from tuition fees and sometimes from the sale of professorships, declared substantial dividends, like any healthy corporation.

The inevitable result was that when one group of doctors started a school, a rival group was sure to start another. At one time there were eighteen medical institutions in Chicago alone. They advertised for

customers—that is, students—as brazenly and more falsely than rival grocery stores. The trouble with medical education was that it had become a profitable business.

But even in the worst days the schools were owned by doctors, controlled by doctors and amenable to medical opinion. When the profession generally became aware of what was happening, and when the American Medical Association organized its Council on Medical Education, affairs took a quick turn for the better. The Flexner Report of 1910 put the Klieg lights of publicity on the situation. All of us remember the hue and cry, expostulation and explosion, recrimination and apology that followed. Medical education, like a hunted rabbit, jumped for the tall grass and the brier patch.

Followed an era of closing schools, mergers, transfers to universities. In ten years the number of schools was reduced 50 per cent. The entrance requirements were raised to two years of college study with prescribed scientific content. Faculties were strengthened. Facilities were improved. Courses of study were made better. One decade accomplished a metamorphosis in medical education.

Now there are 66 four year schools—about the right number. They have secured endowments undreamed of as possible thirty years ago. They give the student more than he pays for. There is no profit anywhere in medical education.

Of course, we do not think that the system is perfect. But everybody acknowledges that medical education has reached a high level. I for one consider it reasonably stabilized. I note that a commission which went ambitiously to work five or six years ago to discover errors and improve educational processes has failed to make the revolutionary recommendations that some expected. Experiments go on, improvements are instituted. But it is in details rather than superstructure that changes are made. I look for no more revolutions in medical education. The public supports medical education and medical education is good.

And now I come to nursing. I will not attempt to say what nursing education should be. All will acknowledge, however, that it should be ample to prepare the nursing students for the work the doctors wish to have performed. I will add further the opinion that such service needs a pretty good intelligence, a fair cultural background, a reasonably strong scientific foundation and a thorough technical training. I base this opinion on some considerable study of nursing procedures. Further, I find myself supported by no less an authority than Dean Rappleye who says: "The remarkable increase in medical knowledge during recent years has added greatly to what the nurse is expected to know and to what she is expected to do."

However, it is the support and control of nursing schools that I wish to discuss. I wish to follow the analogy between medical education of thirty years ago and nursing education today. There are at the moment about 2200 nursing schools in the United States—2200 nursing schools and 66 medical schools! There were 22,000 nurse graduates in 1931. The profession is terribly overcrowded. There simply is not enough sickness to go around! Minneapolis private duty nurses have averaged five days' work per month during this year. The same story is repeated everywhere.

Further, there is much complaint of the quality of nursing service. Doctors complain. Patients complain. Ring Lardner's satire on the modern nurse takes its place as a classic along with Dickens' description of Sairey Gamp.

Nursing is a sick profession. Nursing education is in a bad way. And why? Undoubtedly, I think, because there is profit in it. It costs less to run a hospital with student nurses than it does with graduate nurses. Profit in education inevitably lowers standards, weakens instruction, demoralizes the educational product.

Worse still, the nurses, unlike the doctors, do not control their schools; the hospitals control them. The schools, therefore, are only remotely responsive to nurse opinion, tradition, professional necessity. The schools are in the hospitals to give cheap nursing service to the patients of the hospitals. The hospitals get the profit.

That is what we say and we condone the situation on that ground. But when money is saved or profit made, someone in the long run saves it or gets it. When a corporation saves money it goes to the shareholders. Who gets the money that the nursing students save the hospitals?

Take a municipal hospital. It is supported by taxes. If the training school saves such a hospital \$10,000, it is really saving \$10,000 in taxes. Is not that a pleasant thought? Here is a city school—a school owned and conducted by the city—which not only costs the taxpayers nothing but actually saves money for other municipal purposes.

Or consider a hospital supported by philanthropy. If the training school saves \$10,000, it really is leaving that amount in the pockets of the wealthy friends of the institution. They pay less for the comfortable feeling of being benefactors.

Or a hospital that just breaks even, being supported by the patients' fees. The \$10,000 saved by the nursing school goes to the patients in lower bills than they would otherwise have to pay.

Finally, there are some hospitals that make money as business enterprises. If such a hospital has a school and the school saves the hospital

\$10,000, the owners get the \$10,000 as dividends. No getting around that. The owners pocket the students' wages.

These are the possibilities. The taxpayer, philanthropist, patient or owner—or a combination of these—gets the money that the nurse students earn, or, as we say, save for the hospital. The nurses do not get it nor is it spent on their education. This is the fundamental injustice in nursing education; the fundamental error of the system.

Suppose every business or industry needing ten or more stenographers should say: "We will have a stenographic school; we will have the president's secretary do the teaching (that will cost us nothing); the vice president's and the treasurer's secretaries will help (also without expense to us); we will keep our pupils three years and after the first six months expect them to do full work—including Sundays; we will give them board, lodging, laundry—and a swimming pool; at the end of three years we will have a little celebration—perhaps in a church!—and give each one a cheap gold pin; we will then take in a new batch of girls to do our work; we will recommend our graduates to people who need stenographers; regrettably, we may hire a few ourselves when we can not get student stenographers enough." Imagine the condition of affairs in the stenographic profession! This is a fair, if somewhat highlighted, picture of nursing education as it actually exists at the present time.

Now, I contend that the number of nursing schools can never be reduced to the number which the country needs until the profit is taken out of nursing education. I contend that the hours of duty, almost universally too long either for education or for health, cannot be made moderate until the profit is taken out of nurse education. I contend that the nurse teachers cannot control the curriculum so as to get proper experience in all branches of nursing and so that adequate clinical and scientific instruction is provided until the hospitals give up the unholy profit they are making on student labor. I contend that there cannot be reasonably high standards of admission, scholarship and graduation until the profit is squeezed out of this educational enterprise. I contend that the patient cannot be reasonably sure of getting a competent nurse until the profit is eliminated from nursing education.

How much is this profit? Some hospital people pooh pooh the situation and declare the saving or profit to be insignificant. I for one do not believe this. I believe the profit in most schools is substantial. But few accurate studies have been made.

According to figures given by Dr. Doane in a recent issue of the *Modern Hospital* the profit per student nurse comes out \$200 to \$450

a year according as one takes his highest or lowest estimates of expense and student value.

More accurate studies have been made in the four hospitals of the University of Minnesota School of Nursing. They show that each student does work for the hospitals to the value of \$200 or more each year, over and beyond all that is expended for her maintenance, instruction and every expense of her being there.

I submit that if this profit were spent on nursing education a complete revolution of this enterprise could be effected—even then it would cost the hospitals nothing, the public nothing. The students would earn it all. It would be as if the students were paid in cash for their work and then were charged a tuition fee of \$200 or whatever the proper sum may be. Think of what could be done if the schools had such sums at their disposal for instruction, laboratories, libraries and so on. I submit that justice demands that the profits should be spent on education. The profits come from student labor. Why should they go to hospital owners, tax payers, rich supporters of hospitals? Why should they go to lower patients' bills?

I submit that this reform should be effected at once. The situation is grave. It gets worse every year. No time should be lost in correcting it. I submit that nursing is important enough to the medical profession, important enough to the public whom we all in last analysis serve, to demand that medical educators take an interest in this field. I submit that nursing educators should have the aid of the medical schools and of educators in general, in working out a satisfactory solution of their problems.

I submit that a great wrong is being done—to the nurses primarily but reaching to the practice of medicine and in the long run, to the public. I submit that this wrong must be righted and that it is the duty of all honest minded men to help right it. That is why I bring it up here in a place where new buildings are being dedicated, new things are being tried, new thoughts are in men's minds and new responsibilities on men's souls.

Personal Experiences at the University of Würzburg, Germany

ALBERT J. RITZMANN, M. D.

Brooklyn, New York

(The following report by Dr. Albert J. Ritzmann, Jr., on post-graduate medical study in Germany is printed through the courtesy of the Institute of International Education in New York and should prove of interest to our readers for the first-hand information which it contains regarding German methods in medical education as compared with those prevailing in the United States. Dr. Ritzmann spent the year 1930-31 at the University of Würzburg on a fellowship granted him by the American German Student Exchange of the Institute. He received his M. D. at the College of Physicians and Surgeons at Columbia University in 1930 and is at present on the staff of the Long Island College Hospital in Brooklyn.)

The report covering the first semester of work as Fellow under the Institute of International Education at the University of Würzburg was purposely descriptive in nature. Topics as a whole were considered in a general way without attention to details and specific discussion. The present report, although more critical in aspect, was aimed at an interpretation of the conditions as they presented themselves to me in my limited sphere of work at the University of Würzburg, in the Pathological Institute and in my external contacts with the people.

My medical work, as a whole, in Würzburg has been more than satisfactory to me. I cannot value it too highly. It has given me a foundation in pathology that I probably could not have obtained in America. It has enabled me to read German scientific literature almost as easily as papers in English. Professor Martin Benno Schmidt is one of the few remaining old-time classical professors of pathology. He was the first and oldest student of Von Recklinghausen who in turn was the student of Virchow—the Father of pathology. I considered myself privileged to work under Geheimrat Schmidt who is considered one of Germany's outstanding pathologists. Aside from scientific attainments he is one of the finest men I have ever known. In Germany he is honored and respected both as to character and professional ability.

As mentioned in a previous report, Dr. Schmidt gave me a laboratory in which to carry out my research work concerning the experimental extirpation of the thyroid gland. Without going into a detailed discussion of the scientific aspects and value of the work, I can truly say I am glad to have handled the problem. Although it is as yet unfinished, I hope to continue it in America and undoubtedly will publish the results on its completion.

In addition to pure research work and practical work consisting

of the performing of autopsies my time was taken up with the various courses in pathology. Professor Schmidt is an excellent lecturer. His lectures are renowned and of a sterling quality. They are well attended. I was privileged to assist as instructor in the microscopic pathology course during my stay at the Institute.

Facilities for research at the Pathological Institute can be considered good in some respects and excellent in others. As to quality of professional leadership under Dr. Schmidt, nothing but terms denoting excellence can be used. He is well-informed on all subjects. He was and still is considered one of the world's best pathologists. Some of his ingenious investigations on bone pathology, iron metabolism, carcinomatous metastasis and renal infections are fundamental in nature and will always hold good. I have never met a leader who so earnestly tries to teach and help others. He is one of the old-school type of professors. I am sure he has inspired several men to follow in his footsteps and carry on his ideals.

From the standpoint of equipment and material with which to work, certain definite reservations must be made. Citizens and foreigners alike who are connected with the Institute must bear a large share of the expense of their research work. One must buy and pay for all animals that are required. In addition, one usually buys equipment—glassware and extra necessities—that momentarily may not be on hand. Economy, with capital letters, is the rule at the Pathological Institute. Little or nothing is wasted. Waste rags are washed and rewashed. Substitutes of various sorts—such as methyl alcohol for ethyl alcohol—are used. Glass slides and cover glasses are used again and again. Many different workers are obliged to use the same small-bottle sources of material. Borrowing and loaning of equipment and material to one another is common. Hundreds of small inconveniences, at once strikingly evident to the visiting worker, arise because of this lack of abundant or necessary material or supplies. But honest, time-consuming, intelligent, valuable, high-grade research work goes on just the same. German workers have grown accustomed to these deficiencies since the war. The spirit of "do without" and "help one another" pervades the atmosphere in the Pathological Institute. Foreign visitors and workers soon fall in line and help along and soon learn to play the game as well as the Germans.

Despite all of the needs and wants and apparent deficiencies that undoubtedly exist in all lines of investigative work in Germany, I as a visiting foreigner see a certain benefit that arises from this want. The men are welded together in their adversities; strength, future

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strength, and not weakness, is bound to be the outcome of this condition. Ingenuity takes the place of plenitude. One cannot help but be cognizant of the German ability to theorize and penetrate and get close to the problem in hand despite the physical and material shortcomings.

Another very apparent and truly important handicap to German investigative work is in the line of library facilities. Foreign periodicals, dating from the time of the war, are almost entirely lacking although most of the truly necessary and worthwhile German pathological literature is subscribed to and maintained at the library of the Pathological Institute. To the same extent this holds true also for the other departments—surgery, medicine and pediatrics. These also have their own individual, rather small libraries. In these, however, supplementary help from private sources plays a great part. In order to review the literature covering my subject in research it was necessary to spend some time in Munich, in the Stadt Bibliothek, while in that city attending the Congress of the German Pathological Association. Here also, many worthwhile, modern, foreign scientific periodicals are not to be had despite the great aid the Deutsche Notgemeinschaft is rendering along these lines.

Pathology, as a medical subject, as taught in Germany—and I speak from my small experience under Dr. Schmidt at the Pathological Institute—is to my mind superior to the courses given to the medical students in America. In America, in general, the students receive an all-inclusive course in which considerable time is spent in microscopic study of diseased tissue. They have in turn a very scanty knowledge of gross pathology. In Germany the opposite holds true. There, while less time is actually spent studying microscopic sections, the variety of microscopic material offered is fundamental in nature and leaves little to be desired. On the other hand, the gross pathology as offered the German student is very much superior to that in America. There the German medical student sees hundreds of beautifully mounted specimens many of which go back to Virchow. In addition, one of the courses offered by Professor Schmidt is a demonstration course. In this, several hours a week, fresh organs from recently autopsied cases are neatly laid out and displayed with a short synopsis of the clinical history, a description of the gross and microscopic findings in detail and a lengthy discussion of the application of the findings to general pathological principles. In this way, over a period of several weeks, the German student has a clear, concise view and picture of dozens of autopsies that have been vividly and clearly described. As far as I am aware, this type of instruction is not to be had in American medical schools.

Medical education as a whole in Germany, when judged by the University of Würzburg, stands perhaps as high as medical education in an average way in the United States. One must remember however that this opinion is entirely personal and is an interpretation of my own experience as a student in probably one of the better medical schools of the United States in which equipment and funds are more abundant. There are perhaps many of the seventy-five or eighty medical schools in the United States that offer their students less in general all-around training than the average medical school or series of medical schools in Germany, since the German medical student usually rounds out his medical curriculum in several schools under the various leaders in the fields in which he happens to be interested. Herein lies the value of instruction and "akademische Freiheit" as it exists in Germany. The German student can change his school at any time and seek the teachers of renown who are leaders in their specialties.

In a scientific sense the young German medical student receives very good preparation. However, the American medical student, before he reaches his clinical years, has already received a good, underlying, preparatory foundation. He is very well prepared to later follow out individual investigative work after his medical course has been completed. He is usually well-trained and prepared in the chemistries. On the other hand, perhaps of greater value to the future German practitioner, is the solid foundation that the continental student receives in pathology; he not only has read and heard about the various pathological changes that occur in the pneumonias and heart diseases, but he has seen them—usually dozens of times. Then too, pathology as taught in Germany gives the student a correlated viewpoint together with a theoretical and practical pathological background that is perhaps better than ours in the United States.

From what I have been able to learn, the amount of practical training that the average American student receives by the time he graduates, prior to his internship year, is about the same in a time sense as that of the average German student prior to his practical year in a hospital. Nevertheless, as an example on the American side, I feel sure that the average student in my class at Physicians and Surgeons was as well if not better prepared both theoretically and practically to handle sick patients and to make a diagnosis and render treatment in a rational sense. Despite this disparity I am convinced that the training a German student receives is very good and adequately prepares him to conduct himself well in future practice. Then again, there is another angle or side to this topic. In

America there are roughly twice as many physicians per population as in Germany. There is no doubt that clamor for admission to medical school is greater in America than in Germany and selection of material is more rigid. In Germany, anyone can and may study medicine provided he presents the necessary qualifications. There, many medical students have already tried their hands at other professions—law and dentistry—and have failed to make the grade. This is virtually impossible with the careful selection that exists generally in the United States.

Medical practice in Germany, speaking in terms of the standard of medical practice, is perhaps not so high as at present in the United States, in certain respects, when compared or judged by hospital and private practice. However, perhaps a fair comparison cannot be made since economic conditions are so low in Germany. Assuming that the average physician in Germany is as well-informed as the average physician in America it would still be impossible for him to carry out the finer details of diagnosis—especially in a laboratory sense—because of the lack of funds on the part of people for medical service and medical diagnostic aids. However, thrown on his own unaided resources, the German clinician is more apt to rely less on laboratory aid and depend more on his innate and developed diagnostic ability.

Perhaps one might say that in a limited sense the standard of medical and surgical practice is slightly lower in the Luitpold Krankenhaus in Würzburg when compared to that of our modern teaching hospitals. Here again, this does not detract from the ability of the physicians or surgeons. Rather, it enhances it. They must work under greater handicaps than their compeers in the United States. More reliance is placed on individual clinical ability. Private and hospital funds are not available for some of the more refined and detailed diagnostic procedures. In many hospitals, as at the Luitpold Krankenhaus, Catholic Sisters act as nurses. Despite their renowned sympathy and good-will these qualities alone do not suffice or supplant well-trained, paid, professional nurses such as exist in America. In addition to all this one must not forget that the German physician labors under handicaps with respect to the type and degree of advancement of the clinical material. Cases of tuberculosis, cancer, ulcer and goiter are common in Würzburg. Brilliant results and excellent hospital reports and showings cannot be made in these cases that have hopelessly progressed through lack of funds to an advanced, hopeless degree. Patients, having no funds, delay too long their appeal to hospitals for aid. Only within the last year the giving of free medicines to the patients within the hospitals

has been discontinued. In Würzburg this ruling cut down markedly the number of admissions to the wards of the Luitpold Krankenhaus.

In considering Germany politically, from a layman's viewpoint, one must keep in mind the present economic status of the country together with the business depression as it now exists. Unrest, unhappiness and bitterness are present to a definite degree. More and more the political parties of discontent, the National Socialists and the Communists, have been gaining in numbers generally and in the Reichstag. They are but an expression of the discontent of the people. All of this undoubtedly has its roots in the fact that Germany as a nation is relatively poor and overburdened with taxes of all kinds in the face of poor business conditions. In addition, the country is unquestionably overcrowded. I am truly surprised that more active unrest expressing itself in the form of lawlessness does not exist. This in itself speaks well of the people in being law-abiding.

Out of all this comes the more concrete political picture as it exists in Germany today. Three trends of party thought can be considered. The first is the communistic idea with the form of government similar to that in Russia. At the other extreme is the dictatorship principle with the party of National Socialists. These people have chosen Hitler as their spokesman and favor this type of government. Perhaps the greatest strength of the party lies in its student adherents. The German youths are rather pessimistic about their own future and the future of Germany as a nation. They wonder why they and their children should bear the burden of the debts of their fathers. National Socialist party principle takes the stand of a strong military background for Germany with changes in the Versailles treaty and reapportionment of land lost through the war. A religious factor also enters the picture since Jews and Catholics are not looked upon with favor.

But the Hitler supporters claim that they desire Fascism not by force but by vote despite the fact that military drills are held at night at definite intervals in the various cities of Germany. Several student National Socialist friends have told me that the organization as a whole is a fairly well-drilled one, in a military sense, lacking only the necessary arms needed for warfare. As a unit the National Socialist party can be considered definitely anti-communistic in tendency.

The third political division is made up of several parties. Collectively they form the nucleus of the republican form of government as it now exists in Germany with Von Hindenburg as President and Bruening as Chancellor. Together, this central division controls more votes in the Reichstag than the other two opposing factors together.

However, there is no assurance that the small parties making up this division will always work and plan together and hold together the government as it now exists.

Sentiment varies among individuals and groups as to the welfare of Germany politically, in a worldly sense. Individuals of the Nazi organization, while not desiring war with other nations acknowledged as unsympathetic toward Germany—France and Poland—do not hesitate to say that in the event that Germany should become so helpless economically as not to be able to pay its reparations obligations they would not hesitate to spring to the assistance of their country in case of necessity. They feel that a strong Germany in a military sense would command the respect of foreign nations. On the other side of the picture lie the older people who have lived through the war and the ensuing inflation. They have tasted to the full the bitterness of a nation defeated and reduced to helplessness. They desire nothing but peace and quiet and will have nothing of force in any sense even though the fear of an unsatisfied and strongly military France may overshadow the nation in the event of stoppage of payments.

In a social way Germany is very interesting. I cannot hope to discuss this topic in but a very superficial manner. At first one struggles mentally to understand the German people, their racial and national consciousness, their philosophy of life. But later, after a short period of time in the country, after establishing oneself, one gets an insight of the Germans, individually and collectively.

They are a clean race, sturdy and hygienic in thought and action. One is impressed with their qualities as soon as one lands on German soil and this impression is further strengthened after a short stay in the country. They are a distinctive people marked by a strong innate drive and power to do and accomplish things. But they are intelligent too. One can be proud to be a German or of German blood. Everywhere one goes in Germany one is impressed with the abilities of the nation as a whole. Their art activity at present is limited indeed. But one has but to look about to see the art interest and activity of Germany of the past. Their industrial interests, at one time tremendous, are also at a standstill. Art, in the strict sense, painting and the fine arts, is also rather inactive. Pure research in some fields, especially in investigative medicine, still carries on but this is probably possible to a large extent through the aid from outside organizations such as the Rockefeller Foundation.

I gained the impression that the nation as a whole was laboring under the present mental and physical yokes which it is unable

to cast off. From a former, wealthy nation, with much pride, it has changed to one that suffers the humiliation of defeat, loss of wealth and perhaps loss of respect in the eyes of fellow nations. The people as a whole give one the impression of being resigned to their fate; many still wonder whether there be some innate racial difference that made the nations of the world turn against them. I felt that the people as a whole were somewhat bitter as to their plight; certain it is that the German youth feels that he has naught to look forward to in the future; while he does not speak of revenge he does not express any liking for the overlording nations demanding his sacrifices of the future in return for the assumed mistakes of his fathers. I am convinced that naught but regret, bitterness, lack of interest, lack of friendliness and perhaps open dislike for other nations collectively, in the minds of the present German youth, can result as the outcome of the existing German situation—economically and politically. I say all this with the knowledge that I am not fully informed—both from economic and national psychological standpoints. However, less well-informed, perhaps, is the average German who labors under the thoughts of physical and psychical slavery brought about by high taxes, lack of work and a reduction to the minimum of the average pleasures of life.

I have nothing but the kindest thoughts for Germany and her people; some of the fondest memories of my life are of my visit to that country. Perhaps Germany's greatest asset as regards her salvation of the future lies in perpetuating her intellectual life through her various universities, libraries and institutes. Perhaps one can most aid Germany through assistance directed along channels designed to sustain the standards of and perpetuation of this intellectual life.

My stay at the Studentenhaus was a very pleasant and happy one. It was marked from the very beginning by a joyousness and friendliness between the coworkers at the Studentenhaus and myself that is difficult to describe. I am greatly indebted to the Director, Dr. Klein, and his colleagues, each and every one. With them, naturally, I made many contacts. Indirectly, from them, I learned much of the German way of thinking and gained many first-hand impressions. To me, the Studentenhaus was a home of the nicest sort and a haven of warmth and comfort.

The year of study in Germany as a Fellow is of untold value. One returns prepared to take one's place in the scheme of things; one has seen how the "other half lives." One gains the feeling of wanting to be a leader. One learns to evaluate more soundly; to be critical in a helpful sense. One feels that he is "a man of the world." Interna-

tional barriers are broken down; one thinks in an international way.

In addition, one gains the things that cannot be measured or evaluated by material standards; they are the things that alter and enlarge the scope of one's soul and the philosophy of life; they tend to make one more tolerant of people of other races and nations; they are the things that make one want to live and work and produce.

In my own restricted field—in medicine and pathology—my stay in Europe has brought me to a closer understanding of European workers along medical research lines. Heretofore I had faith, implicit in nature, in American workers alone. My contact, small as it was, with the previous generation's masters in medicine and pathology, in Germany, to whom American workers and the scientific workers of the world are so greatly indebted, has brought me closer to my life work; has given me a deeper understanding of the history and philosophy of medicine.

A Comparison of the British and the American Methods of Medical Examinations

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In recent years the subject of medical education has attracted considerable thought and discussion. The suggestion of Flexner that comparisons of the various phases of the American and the European systems would be profitable has stimulated several studies of this particular type. One of the facts discovered by these investigations has been the vast difference in the methods by which success or failure in the preparation of physicians is measured by these nations. The British system of comprehensive examinations at the close of the training period, as contrasted with the frequent examinations in each study as is done in America, has received favorable criticism. In fact, some of our medical educators have advocated that a similar system be installed in our schools. Recently, I subjected myself to the British system by sitting for the examinations of the Royal Colleges of Physicians and Surgeons of Edinburgh and obtained some direct impressions of the product of their methods.

The Edinburgh Examinations

The system as exemplified by the Edinburgh schools consists, in the main, of three examinations. The first examination includes, with some

exceptions, those subjects which we include in the premedical course, and is given at the completion of the entire group of premedical studies. The second examination, which is given at the close of approximately two years of professional study, includes the basic medical sciences which are usually studied in the first two years of our regular medical course. The final examination is given at the close of the minimum medical training for licensure by these corporations. It is a comprehensive examination in the clinical subjects of medicine, surgery and midwifery. A large amount of emphasis is placed on the facts of the basic sciences as they apply to these clinical subjects.

Each of the three parts of this examination system is further divided into three parts. For example, the final examination is conducted in the following manner: The first division is a written paper similar to our ordinary final examination. The questions asked in this part are largely of the topic or discussion type. The second part is the practical phase. The candidate is given a laboratory or clinical problem to solve on a ward in the infirmary. This may consist of a case study, with a complete differential diagnosis, or it may be the actual performance of some diagnostic or therapeutic procedure. The third part is an oral examination. The student is examined by two examiners, each of whom grades the student on the questions asked by the other. Each one is allotted fifteen minutes to ask questions. There are two examiners in each of the three major clinical subjects of medicine, surgery and midwifery. The questions asked include a large amount of the facts belonging to the basic sciences.

These examinations are given every three months. The time of sitting for the examinations is left entirely to the student. A minimum period of time must elapse between the registration as a medical student and the sitting for the examination, but no limit is set by which time the examinations must be finished. As a result of the frequency with which the examinations are given, and the conscientiousness with which they are administered, there has been developed an adequate group of expert examiners. Not only the teachers of the local schools but also representatives of the government and the local profession are members of the examining boards. The governmental supervision attempts to correlate the work of the various boards in the different medical centers of the kingdom.

Effects of Examinations

Our interest in this system is largely concerned with its products. What are its effects on the mechanics of teaching? How does it influence the teacher from both the pedagogical and the philosophical point

of view? Lastly, but not the least, does it influence the working habits of the student?

Conduct of College Courses

The method utilized in the conduction of their courses varies considerably from our own. Aside from the problems directly attributable to the differences in the administrative organizations there is still very little similarity to the American methods of classroom management. This variation is due, in part, to the standardization efforts of the American Medical Association as much as to the effects of their examination system, but the two factors only serve to increase the degree of difference. The American Schools keep a detailed attendance and grade record. The Royal Colleges of Physicians and Surgeons of Edinburgh have no such record. The instructional courses are available, but if the student does not care to attend them, there is no effort made by the school to force his attendance. The attitude, apparently, is that it is the responsibility of the student to insure that his preparation for the examinations will be adequate. Consequently, the interest displayed by the students attending a demonstration is keener than ordinarily seen in the American schools. The time saved by the elimination of repeated roll calls, graded quizzes and other police duties is available for more thorough demonstrations and lectures.

Effect of System on Teachers

The effect of the system on the teacher is very noticeable. The product of the teacher's efforts is evaluated by an impartial board as measured by the success of his students in passing their work. The man doing the teaching is not depended upon to judge the degree of proficiency in a given subject that the student has attained. Hence the tendency of some teachers to "ride a hobby" to the exclusion of other important facts is thus largely eliminated. The freedom which the students possess to choose the teacher who gives the most valuable instruction insures success to those teachers only, who produce the best courses. Consequently there is a constant progressive improvement in the material presented to the students. Regardless of the brilliance of a man's research, he cannot continue as a successful teacher unless he makes the effort to prepare for his teaching responsibilities. The situation may be summarized accurately by saying that it presents an excellent opportunity of developing "master teachers."

Effect of System on Student

The average medical student trained in this system compares favorably with the average product of the American school. He has, however, learned to carry the responsibility for his own education which becomes

very valuable in his postgraduate training. There is a better opportunity for the poorer type of student of eventually completing his work. He is able to take more time to complete the required work than the average student consumes. The merits of this possibility may be questioned by many. The cramming problem, unfortunately, is not eliminated in their work. Many of the examiners require details which soon become almost traditional. These facts are crammed for by the candidates during the last few evenings before the examinations.

My personal impression was that the students placed too much emphasis on the importance of this preparation. If the student is not adequately prepared in the basic fundamental facts of the science, the examiner often requires details of relatively unimportant facts which serves to accentuate the unpreparedness of the student. At the close of such a seance the candidate has no misgivings regarding his failure in that particular subject. Later, however, in explaining the reasons for their failure in the examination, the candidate tends to place more emphasis on the insignificant points that he did not know than on the fundamental principles in which he was not prepared.

Summary

1. The British system of examinations allows greater flexibility in the conduct of courses.
2. It presents an ideal situation for the development of "master teachers."
3. It places the responsibility for securing an adequate education on the student.

Some Causes for Poor Scholarship

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Much has been said and written on the problems of education in the medical school during the past fifteen years. The number and diversity of articles that have appeared testify to the general feeling of dissatisfaction in regard to the mental equipment of the students who come to our medical schools. Various schemes and methods have been advocated as remedies, but it appears that very little, if any, progress has been made in these attempts to improve the situation. We still hear the same complaints that were voiced twenty years ago. It appears that the complaints have increased instead of diminished.

Our problem of scholarship is chiefly concerned with the freshman medical student. In the majority of medical schools, the responsibility of starting the "new recruits" in the work of the medical curriculum falls on the Department of Anatomy. This department also is responsible to a large degree for much of the "weeding out" process.

When one is interested in teaching, and has had practical experience in this field for about twenty-five years, perhaps one does not need to apologize for coming forward with observations and analyses that have been made during this period of time. As a result of these observations and analyses, I am convinced that a very large percentage of failures of first-year medical students is directly traceable to the system of general education under which they have been trained. I am further convinced that professional pedagogy is largely based on an erroneous principle, and that it is high time that it be brought back to a rational basis. The object of this article is an attempt to analyze briefly the situation with the hope that something might be done about it.

The medical teacher does not like to be labeled a "pedagog." The term smacks too much of "discipline" and carries a little suggestion of "school ma'am" with it. This attitude of mind may have some justification back of it, but it is unfortunate in relation to the problems of medical education. About twenty years ago, when I first began teaching in a medical school, I became cognizant of this feeling toward "pedagogy." The medical teacher (especially in the preclinical subjects) is primarily a scientist. His attitude toward pedagogy is based on the assumption that the students who come to his classes have been trained to the point where they are capable of doing independent work. Obviously, the responsibility of preliminary training cannot be laid on the

shoulders of the medical teacher. Since this position is justifiable, perhaps, he has given little thought to or study of the causes for student failures. If the student can remain afloat, regardless of the paraphernalia that accomplishes this end, he has been permitted to float on to graduation—the question of his ability to swim, perhaps, has never come up.

That medical teachers have been cognizant of an unsatisfactory preliminary training of medical students is testified to by the numerous changes that have been made in pre-medical requirements during the past twenty-five years. We may not all be in agreement in regard to some of the specific changes that have been made in more recent years. In general, it would appear that the requirements have been improved. However, it does not appear that the character of work of the freshman medical student has shown any especial improvement in recent years. It is quite a natural reaction for an instructor to hold the student responsible for his failure. The instructor usually concludes that the student is lazy, or is indifferent, or is spending his time at revelry, or is mentally incapable. When we stop to contemplate the tremendous "advances" made by public and private education in the last twenty-five years—the extensive equipment, insistence on "training" of the teachers, supervisors for supervisors for supervisors, psycho-analysis, and what-not, we feel that we are entitled to expect a well-trained group of candidates for our medical schools. Our disappointment in this particular is so well known that it needs no emphasis here.

"Passing the buck" may be an immediate convenience in dealing with perplexing problems, but it very seldom brings about a solution of the difficulty. There is nothing to be gained by passing the responsibility on to the college, the college in turn passing it on down the line. The student, who after all is the object of our concern, has no voice in the matter and the "buck" ultimately comes to rest in his hands. Obviously, the student is not capable of making an analysis of his difficulties. If he were, then there would be no problem concerning him. We need mention only one remark that has been voiced by college professors to illustrate the attitude toward the responsibility for poor scholarship—"50 per cent of the students in college do not belong there." Usually this statement is not qualified, nor is its meaning explained. One would naturally infer that it means that 50 per cent of the students in college are mentally incapable.

College students represent a fair cross section of the young people of the country. If we should accept this 50 per cent statement as being true and to mean that this percentage of college students are

mentally deficient, then we would have to conclude that 50 per cent of our young people are mentally deficient! Who of us is willing to subscribe to such absurdity? I frankly admit that I have never heard the statement that 50 per cent of our college students are mentally deficient, but I raise the point, if they are not mentally deficient they must be mentally efficient, and if they are mentally efficient then it is high time that we begin to analyze the situation and attempt to find out why your entering medical students are so poorly equipped.

During the past ten years, I have been especially interested in attempting to ferret out the causes for the poor scholarship shown by a large portion of the class beginning the study of anatomy. The percentage of failures has averaged around 20 of the class. Approximately 30 per cent of the class are barely passing. The average number failing to pass the first examination given in gross anatomy runs about 40 per cent of the class. The first examination is given after the completion of the dissection of the upper extremity and comes in the fourth week after the beginning of the course. The students who fail to pass this examination are called to the office individually and an attempt is made to determine the causes for failure. In these student conferences the attempt has been made to determine the student's attitude and conception of various factors in connection with learning. The chief topics considered have been: the purpose of studying a particular subject; what does learning consist of; method of study; memorizing; the value of understanding a subject versus memorized knowledge; the basis for intellectual curiosity and its relationship to learning; examinations and their relation to education. An analysis is made of the manner in which the student has been studying. An attempt is made to teach the student a rational method of study.

From the analyses that have been made in these student conferences it has become clear to me that the major part of the responsibility for poor scholarship can not, with justice, be laid on the shoulders of the student. Obviously, in making these analyses, it is essential to have a rational conception of education and what it is striving for, as a background or basis for our study. To make our position clear, it is first necessary to attempt to arrive at a logical solution of the question: What does education consist of? The essential factor in education is learning. Our chief problem then is an analysis of learning. What are the methods and relative values for attaining this end? We may learn by memorizing—a tedious method that requires numerous repetitions until eventually the formula becomes a habit. Such a process is essentially a "mental massage" and does not develop the more im-

portant mental faculties. The normal individual resents the necessity of memorizing.

In contrast to the memorizing method is learning by understanding. Such a method requires analyses and visualization. Curiosity is, perhaps, the most important attribute required in this method of learning. Curiosity or the desire to know is a preparing of the soil to receive the seed. Curiosity implies a questioning mind—a desire to know the why and the wherefore of things and activities. It is one of the outstanding attributes of the preschool child. If the child does not exhibit a curiosity about his surroundings, we immediately conclude that there is something wrong with the child. Learning by understanding is a natural method that stimulates and develops the mental faculties. It is also significant that the labor involved in this method is not irksome. Real mental exercise appears to result in much the same sort of exhilaration as is gained from physical exercise.

In a few cases it has been found that the student himself was chiefly responsible for his poor scholarship. However, in the great majority of cases the failure or poor scholarship appeared to be the result of the preliminary education of the student. The following factors appeared to be the causes for poor scholarship: lacking a rational method of study (attempting to memorize); wrong attitude toward the subject studied and examinations; lack of intellectual curiosity; lacking a knowledge of certain subjects that are not required in the premedical training. In analyzing these factors it becomes apparent that the more significant ones are acquired in the early training of the individual.

It was stated above that curiosity or the desire to know is an outstanding characteristic of early childhood. No one who has come in contact with young children could have failed to notice this characteristic. The question is: What has become of this desire for knowledge in the beginning medical student? Who is to blame? Is the loss of this desire a natural result in developing youth? These questions imply that the desire has been lost. Those of my readers who have had teaching experience with freshman students when they first entered the medical school, certainly must have been impressed by the lack of interest on the part of a large percentage of the class. I am convinced that the loss of intellectual curiosity comes about early in the public school training of the child. Further, I am convinced that it is the "system" used that is responsible for this condition.

Twenty-three years ago it was emphasized that "the essential qualification for a good teacher is to know how to teach; that it is not so

important to know the subject." The absurdity of such a principle is so obvious that it would be superfluous to discuss it here. Unfortunately, the principle apparently is still the keystone of professional pedagogy. Only a few summers ago, I was informed by a reliable authority, that one of the prominent men in education stood before a class of five hundred students (mostly school teachers) in one of the larger universities of this country and reiterated the same old fallacy. If the emphasis is placed on method at the expense of a knowledge of the subject, what can we expect in the way of results from such a system? Obviously, there are many teachers who intuitively appreciate the importance of a knowledge of the subject they are teaching and insist on the pupil understanding the subject matter of the course. It is equally obvious that there is a large number of teachers who lack this intuition. To them, the passing of examinations by the pupils is the yard stick by which their success as teachers is measured.

That this fallacy of what makes a good teacher has become operative in our public school systems is testified to by the policy of the school boards in the majority of American communities. It has become almost a universal policy in this country to base the salary of the teacher on the amount of "training" she has had. Without further analysis, such a policy would appear to be reasonable, just and sensible. When "training" is gauged by the number of credits acquired, the value of the policy becomes questionable. When we further realize that a certain per cent of these credits must be in education, and that there is nothing demanded in the way of increased proficiency in the particular field or subject being taught by the teacher, it becomes obvious that the policy defeats the very purpose for which it was intended. Three outstanding results have developed as a consequence of this policy: there has been a tremendous increase in summer school registrations, there have been mushroom growths of departments of education, there has been no perceptible relative improvement of the mental equipment of the product from the public school system. We are particularly concerned about this last named result.

It is not to be inferred from this discussion that I do not believe that there is any need for training in education. However, I do insist that the principle, above mentioned, which emphasizes technique of teaching at the expense of knowledge of the subject is erroneous, and is largely responsible for the poor mental equipment of our students.

To return to the analyses made from our student conferences, I believe that their chief difficulties are traceable to the type of preliminary training they received. I wish to discuss briefly what was

learned from these conferences and from my experience in the class room. While I believe that the various factors responsible for students' difficulties are all related to a common factor—an erroneous conception of education—I wish to discuss some of these factors individually.

MEMORIZING. It would be difficult to determine the exact percentage of a class that would attempt to memorize anatomy if they were not warned against it on the first day the class meets. Judging from my own experience during the past ten years, my guess would be that the percentage would be up in the nineties. Of those students who have had difficulties in their work almost all of them have confessed that they were attempting to memorize the subject. It would appear to be a simple matter to emphasize sufficiently the futility of memorizing, and explain a method of study to a class of students so that they would appreciate and follow such a method. This is not so simple as it may seem. First, we must realize that the students' conception of learning has been memorizing. Second, his past experience has been largely memorizing. He must completely change his method of study. He has had very little or no experience in analytical methods that are essential to understanding. When the first examination nears he is on the verge of hysteria. He reacts as one might expect. He reverts to his old habits of study—memorizing. He comes to the examination and finds a number of questions that are of a practical nature. These practical questions are easy questions, but they require an understanding knowledge of the subject to be answered correctly.

EXAMINATIONS. Attitude toward examinations appears to be one of the major factors responsible for poor work on the part of students. The entire educational experience of the student has been an emphasis on examinations. They are the necessary barriers that must be hurdled to get on to the next running stretch. It has become a game of hurdles. The idea that a certain course is taken for the knowledge and training one may get from the course is lost sight of. The essential problem in the student's mind is to pass the examination. It is obvious that if this is his attitude he has very little real interest in the subject.

During the past few years it has become very apparent that the students who come to us have a very meager general knowledge of the human body. This was so evident in the present class that I was prompted to ask: how many had had a course in physiology in the high school? One student in the entire class answered in the affirmative. On further inquiry I learned that physiology is not only not required any more, but that it has been removed from the curriculum in most

of the high schools in the country. I do not know why this course was dropped from the high school curriculum. The effect of its removal is certainly reflected in the attitude and mental equipment of the entering medical student. The course in anatomy is intended to give the student a rounded out knowledge of the morphology of the human body. The question might be raised: if this is the purpose of the course, then why should one expect students to have a preliminary general knowledge of the subject.

Anatomy cannot be studied intelligently from a purely morphological view point—the functional aspect must go hand in hand with a consideration of the structure. This does not imply a detailed analysis of the physiology of all the structures in the body, but rather a general consideration of function. Formerly these general considerations or elementary principles of anatomy and physiology were taught in the high school. The high school text that was used described the general structure of the body and discussed the general principles of physiology. While the teacher, perhaps, had never seen a dissected body, or had never taken a college course in physiology, the language of the text book was simple enough so that the pupil could understand it, and he gained a general knowledge of the human body. Without this general knowledge of the human body, the medical student is decidedly handicapped when he takes up the study of human anatomy. It might be asked, why cannot the course in anatomy begin with a general consideration of the structure and physiology of the human body? To a certain extent this is done, but it is entirely out of the question to give an adequate course of this character in the medical school. In general, such a course bears the same relationship to anatomy that a course in elementary physics bears to advanced physics.

To overcome this deficiency in a general knowledge of the human body, we are planning, at this school, to request those who have been accepted for enrollment in our freshman class to study Harvey's "Simple Lessons in Human Anatomy," before they come to the school. We believe that a careful reading of this excellent book should serve to give the student a proper background and enable him to pursue the study of human anatomy more intelligently. If this book is read carefully, it also should serve to stimulate curiosity or interest in the human body.

The question may arise: What relationship does the amount of premedical training bear to scholarship in the freshman year of the medical school? During the present academic year, 23 students failed to make a passing grade in the first examination given. Eleven of these students possessed a Bachelor's degree, and two had the Master of

Arts degree. These degrees had been granted by colleges in this state and other states. Three students were dropped at the end of the first quarter on account of poor scholarship. One of these three possessed a Bachelor's degree. Of 38 students who finished the first quarter's work, 13 had grades of 80 or better. Seven of these 13 students have a Bachelor's degree, the remaining 6 do not have a degree.

From the study that has been made, I am convinced that, with but few exceptions, the students who come to our medical schools are sincere, willing and conscientious. Further I am convinced that the responsibility for failure in a large number of cases cannot primarily be placed on the student, but that it is due to the character of his preliminary education. As a result of these convictions, I believe that those students who are dropped on account of scholarship should be given an opportunity to repeat.

During the past few years, a policy has been put into operation at this school which permits those who have been dropped on account of poor scholarship to repeat the first quarter's work in the summer session. If these students do satisfactory work in the summer session, they are permitted to join the regular class at the beginning of the winter quarter (2nd quarter of the regular session). The results from this arrangement have been very promising. The number of such repeaters since September 1925 has been forty-five. Five of these students were dropped a second time due to poor scholarship. Of the forty students that have been able to continue in school, their scholarship records show that about 10 per cent are rated in the upper third of the class, about 50 per cent in the middle third and 40 per cent in the lower third.

These results appear to justify the policy of permitting students who fail in their work to make a new start in the summer session. Further, it might be emphasized that this arrangement does not have one of the objections usually raised against a student repeating the freshman year, namely, that every repeater is taking the place of some candidate for enrollment into the class. The repeaters who make good in the summer quarter take the places of those who were dropped at the end of the first quarter.

I believe that the results shown from this policy of permitting students who fail in the freshman year to repeat the year has largely verified the correctness of his analysis of the causes for poor scholarship.

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DR. FRED C. ZAPFFE, Editor, 5 South Wabash Ave., Chicago.

The Philadelphia Meeting

The forty-third annual meeting of the Association will be held in Philadelphia, November 14, 15 and 16 (Monday, Tuesday and Wednesday), 1932. Headquarters will be the Ben Franklin Hotel. Sessions will be held at Jefferson Medical College and the University of Pennsylvania School of Medicine. The former is situated only a few squares from the headquarters hotel.

Each session will begin promptly at 9:30 A. M. and end about 1 P. M. Luncheon will be served by the host college. The afternoons will be spent visiting the member colleges in Philadelphia, each delegate and visitor deciding for himself which school he will visit. The member colleges are: Jefferson Medical College; University of Pennsylvania School of Medicine and Graduate School of Medicine; Woman's Medical College; Hahnemann Medical College and Temple University School of Medicine.

The annual dinner (informal) will be held at the Hotel Ben Franklin on Monday evening, at which time the president will deliver his address. The Executive Session will be held on Tuesday evening, also at the hotel, dinner preceding the session.

The program for the meeting will be published in a subsequent issue of the JOURNAL, together with all information as to local arrangements.

Statistics on Medical Licensure

The Journal of the American Medical Association, April 23, 1932, published the results of its annual study of the results of the examinations for licensure held by the various state examining boards

during 1931. The Council on Medical Education and Hospitals has done a fine piece of work and deserves the highest commendation for bringing these data before the profession, especially that portion which is interested in medical education.

Of course, statistics are statistics, and it is somewhat fallacious to base any definite conclusions on them. So many modifying factors of considerable weight are not apparent in statistics. Were they known, the results would be different from what they seem to be. However, certain results shown in these figures are of interest, especially the fact that the total number of failures is growing smaller year by year since these data have been compiled.

During 1931, 4,961 graduates of the approved medical schools in the United States were examined for licensure. Of this number only 151 failed to pass, a percentage of 3.04. The percentage of failures for all schools, including also the Canadian medical schools, was 6.3. Twenty of the medical schools of the United States and three Canadian schools did not have any failures.

The highest percentage of failures for any school in the United States was 17.3; for Canada, 75.0. Only twenty schools had less than 3 per cent of failures (not including the twenty that had no failures); 10 schools had between 3 and 5 per cent of failures; 8 between 5 and 10 per cent; 4 between 10 and 12 per cent, and 2 between 12 and 18 per cent.

One essential fact to bear in mind is that one graduate may account for more than one failure before any one board or several boards. If the schools having

failures would check up on this point, corrected figures could be obtained.

Twenty-seven state boards reported no failures, and only four boards reported a considerable percentage of failures: Florida, 8.3; Massachusetts, 32.5; New York, 14.3, and Wisconsin, 10.1. These figures represent, for Florida, 5 failures; for Massachusetts, 103 failures; for New York, 146 failures and for Wisconsin, 11 failures. In Massachusetts, 90 of the failures are charged to undergraduates, osteopaths and graduates of nondescript and Class C colleges. In New York, 47 of the failures were made by graduates of foreign colleges.

Hospital Tax on Meals

For some time a tax of 5 cents has been imposed on all meals costing \$1.00 or more by the provincial government of Quebec. The money thus collected is used to assist the various hospitals throughout the Province. During the past year, the income from this source has fallen off about \$100,000; therefore the government recently passed a regulation that hereafter the tax will be laid on all meals costing 35 cents and over.

Study of Entrance Requirements of 1931 Freshmen

This study has been completed for the 6,074 entrants, the data having been obtained from the student's biographical blanks sent to the Council on Medical Education and Hospitals of the American Medical Association, access to these records having been graciously granted by the Council. However, by agreement with the Council, this study cannot be published until after the annual Education Number of the Journal of the American Medical Association has made its appearance. The September issue of the JOURNAL of this Association will bring this report and a summary will be presented at the annual meeting of the Association in November.

Department of Nursing in Medical School

The following resolution was passed by the faculty of Columbia University College of Physicians and Surgeons May 25, 1932:

RESOLVED, That the Faculty recommend to the Trustees of the University the creation of a Department of Nursing in the Faculty of Medicine, with provisions for offering the degree of Bachelor of Science to those properly qualified; it being understood that satisfactory arrangements regarding hospital affiliations and financial support would have to be made.

Transfer Students

Colleges are cautioned against accepting students for admission to medical school unless the time which has elapsed since graduation from high school is accounted for satisfactorily. Often a hiatus of a year or more is not explained correctly. A student may have failed in one medical school in his freshman year and apply to another, as a first or original application for freshman work, naturally, without making mention of his failure elsewhere.

A case in point is that of one Kenneth E. Smith, B.S. Wittenberg College, Springfield, Ohio—also his place of residence, who applied to Vanderbilt University School of Medicine for admission to the freshman class of 1932. He did not mention the fact that he had matriculated in the College of Medicine of the University of Cincinnati in the fall of 1930, that at the end of the first semester he had been conditioned in all subjects and that on February 7, 1931, he had withdrawn from the college. Fortunately, Vanderbilt made an investigation and discovered the real facts in the case.

The study of student accomplishment which the Association has been conducting for the past three years has made it possible to accumulate data which can

be used to good advantage by medical schools in checking up on the applications of transferring students. Smith's record was found to be as stated above.

Hospital Statistics

The Journal of the American Medical Association, June 11, 1932, again publishes the statistics on hospitals collected by the Council on Education and Hospitals. The data presented give much useful information about hospitals, especially in the section headed "Hospitals as Educational Institutions" in which the problem of interns is discussed.

Six hundred and ninety-one hospitals approved for intern training offer 6,054 internships with 4,735 graduates as possible candidates for these positions. Incidentally, it must be remembered that not every graduate enters on an internship. Some graduates remain in medical school seeking further training in a special field with a view to becoming investigators or teachers, and some enter immediately into practice. No estimate has been made for some time as to the exact numbers who do not serve an internship, but not more than three years ago 15 per cent of the graduates did not enter hospital service.

The *Journal* says: "The keen competition among hospitals for suitable interns continues. The explanation probably lies in the fact that an intern corps is a relatively small drain on the financial resources of a hospital when the type of service which the interns are prepared to give is considered.

"On the other hand, economic conditions are making interns timorous of entering active practice in the face of limited opportunities and strong estab-

lished competition. We find them remaining longer in hospitals and protracting their term of training as senior interns, assistant residents or the like."

Of course, this is true only in part, because the number of graduates who remain in hospital service for two, three, four and even five years after graduation is increasing year by year as these men evince a growing desire to better their training in a special field with a view to engaging in special practice. One man of whom we have knowledge spent nine years in preparation before he felt that he was ready to practice.

The figures presented as to the number of beds per intern show that while the average is 42, the highest number is 184, the lowest 27. It is evident that if this intern year is to be regarded as an educational or fifth year, a larger number of interns should be appointed by most hospitals if they are to have time to study and ponder, or provision should be made to relieve the intern of some of the more time-consuming duties which might well be performed by a clinical clerk or by a junior intern. The latter arrangement will either split the intern year into junior and senior service, thereby doubling the number of interns, or lengthen the regular service to two years, which, of course, again doubles the number of interns. Naturally, with more internships available than there are prospective incumbents, the solution of the problem lies in the future when either the number of graduates will be increased or the number of hospitals approved for intern training will be lessened.

The real crux of the situation is: How many hospitals approved for intern training actually give such training in an educational sense?

College News

Western Reserve University

M. Albert Pollicard, professor of histology in the University of Lyons, delivered a Hanna lecture at the Institute of Pathology in May on "The Evolution of Histochemistry."

University of Maryland School of Medicine

The University of Maryland celebrated the one hundred and twenty-fifth anniversary of its founding, June 3. The exercises were held in Baltimore and at College Park.

Speakers included Dr. William H. Welch, director emeritus, Johns Hopkins University Institute of the History of Medicine, and John H. Finley, associate editor of the New York Times. Clinics were given by Dr. Raymond G. Hussey, professor of pathology, Yale University School of Medicine, and Major Norman T. Kirk, Walter Reed Hospital, Washington, D. C. The principal speaker at the alumni banquet was Dr. Watson Smith Rankin, Charlotte, N. C. The guests included Raymond S. Pearson, LL. D., president of the university; members of the board of regents; Dr. Randolph Winslow, professor emeritus of surgery, and Dr. Leonard E. Neale.

The University of Maryland Medical School was established as the College of Medicine in December, 1807. It is the fifth oldest institution for medical education in the United States. The schools antedating the Maryland institution are the College of Physicians and Surgeons of New York, University of Pennsylvania Medical School, Harvard Medical School and Dartmouth Medical School. The University of Maryland has absorbed the Baltimore Medical College and the College of Physicians and Surgeons. It has one of the oldest med-

ical school libraries in the country and is said to have been the first medical school to make dissection a compulsory part of its curriculum.

University of Wisconsin

On the evening of June 20, the Medical Faculty gave a dinner in honor of its dean, Charles Russell Bardeen, on the occasion of the twenty-fifth anniversary of his deanship at the Memorial Union, Madison.

University of Oregon Medical School

The eighth Noble Wiley Jones lectures were recently given by Dr. Walter B. Cannon, George Higginson professor of physiology, Harvard University Medical School, Boston. The titles of his addresses were "The Fluid Matrix as a Means of Stabilizing the Organism" and "The Function of the Autonomic Nervous System in Controlling the Fluid Matrix."

Jefferson Medical College

The 107th annual commencement was held June 3. The valedictory address was delivered by Dr. George B. Cutten, president of Colgate University. The subject of the address was "A Layman's Advice to Doctors."

The record of Jefferson graduates in state board examinations held during 1931, continues the excellent record of 1930. 151 graduates were examined before 23 different boards without a failure.

SIMON GRATZ RESEARCH FUND: Simon Gratz, who died August 21, 1925, was for a long time a member of the Board of Trustees of the Jefferson Medical College. At the time of his death, his length of service exceeded that of any other trustee. For many years he was the chairman of the College Committee, and

as such was particularly interested in the school and its graduates.

By a provision in his will, he created a trust fund, the income of which is to be awarded during each period of three years to that graduate of the college who shall be designated as most worthy. The decision as to who shall receive the award is to be based upon the character of the work which has been done by the individuals proposed during the preceding five years. Contributions to the advancement of the medical or surgical treatment of disease, or research work which has been productive of results of practical value, constitute the primary consideration.

ALUMNI FUND: The class of 1932, by unanimous action, has voted to support the Alumni Fund. The plan of participation differs somewhat from that of other classes which have supported the fund in that each member begins his contribution with the sum of \$1.00 the year following graduation, and increases the annual contribution by the same amount over a period of twenty years. If every one of the 143 members of the class signs the pledges and meets them at the time they are due, the total amount contributed by each member will be \$210. The total class contribution during the twenty years will be \$30,030. On January 1, 1932, the total amount of the fund was \$232,660.13.

College of Medical Evangelists

Dr. Arthur E. Coyne, Los Angeles, has been appointed dean of the Los Angeles Division to succeed Dr. Llewellyn C. Kellogg. Dr. Edw. H. Risley is dean of the Loma Linda division.

Dr. Kellogg was appointed director of graduate study. This is a newly created department to give graduate work to the graduates of the school who are located in nearby towns. Dr. Kellogg had been head of the department of anatomy in the college for a number of years.

Commencement exercises for the class of 1932 were held at Loma Linda, June 19.

Columbia University Graduate Courses in Neuropsychiatry

Graduate courses are offered in neurology and psychiatry by Columbia University College of Physicians and Surgeons and cooperating Institutes, beginning October 3, 1932. These courses are designed for graduate medical students interested in the many aspects of neurology and psychiatry. In addition to the clinical survey they aim to cover, in part, the sociological and educational fields. These courses are so arranged as to meet the desire of applicants feeling the need of further knowledge in these branches.

The courses consist of lectures, lectures with laboratory work, lectures with demonstrations, laboratory courses, demonstrations and practical clinical courses.

During the first ten weeks of the academic year beginning October 3, 1932, and ending December 10, 1932, there will be two series of courses, one devoted principally to psychiatry (the Trimester in Psychiatry) and one devoted principally to neurology (the Trimester in Neurology). Any individual course in either trimester (except clinical assignments in neurology and psychiatry) may be taken singly.

The sixteen weeks beginning January 23, 1933, and ending May 13, 1933 (Semester in Neuropathology), are devoted entirely to intensive work in neuropathology, the object being to give a fundamental training in this subject. This work is largely under the supervision of the Department of Neuropathology of the Psychiatric Institute and Hospital.

The fees for the individual courses are given in connection with the description of each course. The entire Trimester in Psychiatry or Neurology or an equivalent number of courses selected from both, may be taken for a fee of

\$200. The total fee for the Semester in Neuropathology is \$250 although the lectures in this semester (course Ce30a) may be taken separately for a fee of \$100, thus omitting the laboratory practice.

Those who have medical appointments in any of the Institutions under the New York State Department of Mental Hygiene may take the Trimester in Psychiatry or the Semester in Neuropathology without payment of tuition or registration fees.

Applicants for admission must receive the approval of the dean of the School of Medicine.

The executive officer is Dr. Howard W. Potter, 722 West 168th Street, New York City.

University of Nebraska College of Medicine

A research fund of \$1,500 was recently received from Merrell and Company, Cincinnati, for a special study of the flora of the intestine of individuals suffering with allergy. The work is being carried out by Dr. Charles P. Baker, under the supervision of Dr. John T. Myers, professor of bacteriology and public health, and Dr. Ernest L. MacQuiddy, who is in charge of the allergy work of the university.

University of Cincinnati College of Medicine

Beginning in 1932, a seven year combined liberal arts and medical program will be in effect. All premedical students entering the College of Liberal Arts in 1932, and subsequently, will conform to the seven year program. The entrance requirements to this course are those of the College of Liberal Arts. The degree of bachelor of arts is granted on the joint recommendation of the faculties of the colleges of arts and medicine at the end of the first medical year, and the bachelor of medicine degree at the end of the fourth year. The student must

obtain a minimum of ninety-four credits in the college of liberal arts as specified in the program. For the first year of the medical college course, thirty credits will be allowed, making a total of 124 credits for the combined course. In order to obtain the bachelor of arts degree from the University of Cincinnati in the combined course, residence in the third year of the course is required.

Commencing in September, 1934, candidates for admission to the freshman class in the College of Medicine must present evidence of three years of college preparation of not less than ninety semester hours, in a college of satisfactory standing. The following subjects must be included: chemistry, zoology or general biology, general physics, English, foreign language, and embryology. Preference will be given to those applicants who are graduates of approved colleges and to those who have completed three years of college work and who signify that they will receive their academic degree on the satisfactory completion of the first year of the medical course. Preference will also be given to those applicants for admission who, in the opinion of the committee on admission, present evidence of high achievement in their college education and who are most likely to succeed in medicine, rather than to those who present the largest number of hours credit, or who have limited their preparation to the premedical sciences. Candidates for admission to the freshman classes of 1932 and 1933 will be required to present the minimum requirements in current effect at the school.

Mont R. Reid has been appointed Holmes professor of surgery to succeed George J. Heuer who has assumed his new duties as chief of the surgical staff of the Cornell Medical Center, New York City.

Albert P. Mathews is granted sabbatical leave for the first semester 1932-1933. He will take up research in the field of biochemistry, mainly in England.

The new outpatient dispensary has been opened. This addition to the teaching facilities of the College of Medicine was made possible by the generosity of the citizens of Cincinnati in voting a \$300,000 bond issue. The institution is for the treatment of the ambulatory sick who cannot afford the services of private physicians. Patients are admitted through the receiving ward of the Cincinnati General Hospital.

University of Illinois College of Medicine

The annual meeting of the Sigma Xi Chapter of the College of Medicine was held May 12. Fifteen members and twenty-two associate members were elected.

Dr. F. R. Moulton, past president of the National Convention was present and addressed the meeting. Dr. L. B. Wilson, national president, also gave an address. Northwestern Chapter was represented by Dr. L. B. Arey, professor of anatomy, and president of the Chapter. Professor E. S. Bastin represented the University of Chicago Chapter.

The scientific program was furnished by Drs. G. Zechel and R. H. Jaffe.

Each year the Sigma Xi presents a prize to the student doing the most important research during the year. This competition is confined to undergraduates. The prize this year was awarded to Edgar A. Thacker for his study of the physiological action of irradiated ergosterol.

The University of Illinois College of Medicine is unique in that it is the only independent Sigma Xi Chapter connected with a medical college. The only similar organization is at the Mayo Institute.

Officers elected for the coming year are: Charles S. Williamson, president; W. J. R. Camp, vice-president; Isadore Pilot, treasurer, and William H. Welker, secretary.

University of Texas Medical Branch

The new Medical Laboratory Building, the John Sealy Outpatient Building and the Rebecca Sealy Residence for Nurses were dedicated May 30-31, 1932, at Galveston. The dedication address was delivered by Dr. Louis B. Wilson, director of the Mayo Foundation and president of the Association of American Medical Colleges.

Emory University Medical School

With the dedication of a pathologic clinic, April 1, clinics for the white and Negro units of the Grady Hospital, Atlanta, were combined in one laboratory, situated at the intersection of tunnels linking the hospital divisions. The new clinic was formally presented to the hospital staff by Superintendent J. B. Franklin. Dr. Russell H. Oppenheimer, dean, Emory University Medical School, with which the hospital is affiliated, made the dedication address. Dr. Roy R. Kracke, chairman of the department of pathology and bacteriology at Emory, spoke on "Ideals in Laboratory Work," and Dr. Jack C. Norris, pathologist at Grady Hospital, accepted the clinic on behalf of the staff. The Steiner cancer division of Grady Hospital will continue to operate as a separate unit, it is reported.

Indiana University School of Medicine

Announcement has been made of a new department of illustration and photography. Work of the department will include drawings and paintings for use in illustrating lectures, textbooks and other forms of instructional service. James F. Glore, graduate of the Chicago Art Institute, has been selected to head the department.

Work especially adapted to medical school students will be offered at the Indiana University biologic station, Winona

Lake, June 18-August 12. This station, which is a field laboratory, will be under the direction of Will Scott, Ph.D., head of the university zoology department. Work will be offered in invertebrate zoology, limnology, advanced zoology, vertebrate zoology, embryology, and research in limnology, embryology and vertebrates. Emphasis will be laid on field work and on such lines of work as can be given to better advantage at the station than with the equipment of the university laboratories and under the restrictions imposed by a recitation schedule during regular university sessions.

Harvard Medical School

Thirty-seven awards totaling more than \$52,000 were made to professors in Harvard University to enable them to carry on research in 1932-1933, under the provisions of a fund established by the late William F. Milton, '58, and a bequest of the late Joseph H. Clark, '57. The Milton Fund grants are made "in the interest of or promoting the physical and material welfare and prosperity of the human race, or to assist in the discovery and perfecting of any special means of alleviating or curing human disease, or to investigate and determine the value or importance of any discovery or invention." The Clark bequest provides that "the income shall be devoted to the encouragement and advancement of original research."

Included among the recipients of the awards are Gregory Pincus, assistant professor of general physiology, to continue and extend his investigation of the nature of the development of the temperature-regulating mechanism of mice; Carroll C. Pratt, Ph.D., and Edwin G. Boring, Ph.D., assistant professor and professor of psychology, respectively, to enable them to purchase audio-oscillators and related electrical equipment to aid in the study of the psychology and psychophysiology of tonal hearing; Jeffries

Wyman, Jr., Ph.D., assistant professor of zoology, to continue work on the electrical properties and behavior of amino-acids, polypeptides and proteins as revealed by their dielectric behavior; Dr. Stanley Cobb, Bullard professor of neuro-pathology, to enable him to have a number of Greek and Latin treatises on epilepsy translated, and Dr. Walter F. Dearborn, professor of education, to enable him to complete the construction of a stereoscopic optometer and to continue an investigation of the asymmetry of retinal images in school children who have difficulty in reading.

University of California Medical School

Faculty changes: Promotions—I. McLaren Thompson and Robert O. Moody to professors of anatomy; Paul L. Kirk to assistant professor of biochemistry; Sidney J. Shipman to associate clinical professor of medicine; Benjamin L. Freedlander to assistant clinical professor of medicine; Olive N. Ehrenclou to instructor in medicine; Norman N. Epstein to assistant clinical professor of dermatology; Frances Torrey and John M. Graves to instructors in dermatology; Francis S. Smyth to professor of pediatrics; William A. Key and Keene O. Haldeman to instructors in orthopedic surgery; Lewis F. Morrison to assistant clinical professor of otorhinolaryngology; Robert S. Stone to associate professor of roentgenology; Abraham Bernstein to instructor in obstetrics and gynecology.

New appointments of the rank of instructor to higher: Sylvan L. Haas, associate clinical professor of orthopedic surgery; Moritz Weber, assistant professor of otorhinolaryngology; Gordon Alles, lecturer in pharmacology; Edward L. Munson, lecturer in preventive medicine and Public Health; Thomas D. Woodson and Thomas L. Long, lecturers in psychiatry; Verne T. Inman, instructor in anatomy.

Sabbatical leave of absence for 1932-

1933 was granted to Robert O. Moody, professor of anatomy.

Among the largest gifts to the University during the period March 13, 1931, to March 12, 1932, was one of \$580,000 from the late Mrs. Christine Breon, San Francisco, for the establishment and maintenance of a fund to be known as the "Christine Breon Fund for Medical Research."

A gift of \$100,000 came from the Boys' and Girls' Aid Society, San Francisco, turning over property and other assets of the organization to the university for the establishment of the "Murdock Boys' Aid Memorial Fund for Child Welfare Research." The society was organized fifty-six years ago by Charles A. Murdock for the purpose of caring for neglected, abused and abandoned children.

Columbia University, New York Postgraduate Medical School

New appointments: Cameron V. Bailey, professor of applied physiology; Thomas Drysdale Buchanan, professor of anesthesia; John A. Killian, Ph.D., professor of biochemistry; George M. MacKee, professor of dermatology and syphilology; Walter T. Dannreuther, professor of gynecology; Duncan MacPherson, professor of laryngology; Herman O. Mosenthal, professor of medicine; Michael Osnato, professor of neurology; Byron P. Stookey, associate professor of neurologic surgery; Martin Cohen, professor of ophthalmology; Harold S. Vaughan, professor of oral surgery; Fred H. Albee, professor of orthopedic surgery; Warren C. McFarland, professor of otology; Ward J. MacNeal, professor of pathology and bacteriology; Roger H. Dennett, professor of pediatrics; Philip R. Lehrman, assistant professor of psychiatry; William H. Meyer, professor of roentgenology; John F. Erdmann, professor of surgery; John J. Moorhead, professor of surgery and executive officer of the department of traumatic surgery; Joseph F. McCarthy, professor of urology.

Dr. Alan R. Anderson, formerly associate director of the medical school, was appointed secretary of the administrative board.

McGill University

The Board of Governors has announced a grant of \$1,232,652 from the Rockefeller Foundation for the establishment of a neurological institute.

University of Missouri School of Medicine

On August 31, 1932, the third and fourth years of the medical course will be discontinued until such time as the university finances permit continuance. These courses were reestablished in 1930 after having been discontinued since 1910. Provision has been made to transfer the twelve students registered in the third year to other institutions. They will receive their degree from the University of Missouri on successful completion of the fourth year.

President Williams announced that this discontinuance of the clinical years is temporary only; that experience has justified their maintenance at Columbia; that the clinical facilities have been more than sufficient in all the courses.

University of Chicago

Graduation in medicine eight years after entering college, instead of the present nine years, will be possible at the School of Medicine of the Division of Biological Sciences, University of Chicago, with the beginning of the spring quarter. For admission to the medical school, adequate training in physics, chemistry, biology and mathematics is recommended, in addition to a reading knowledge of German or French. After 1933, a reading knowledge of German will be required. It is expected that this preparation will ordinarily be completed in the first year in the division. Selection by the committee on admissions will be based on character, aptitude and

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scholarship. Evidence of interest and ability in research will commend applicants to this committee.

Requirements for the granting of the degree of doctor of medicine, as approved at this meeting, provide that group examinations be abandoned and general departmental examinations be substituted for them. The student will be required to pass a general departmental examination in each department during the quarter in which he completes his work in that department. The requirement of a thesis for graduation is abolished. The degree of doctor of medicine with honors in one department will be given when, in addition to meeting with distinction the requirements for the degree of doctor of medicine, the student has also completed a satisfactory thesis constituting a contribution to knowledge. This degree will be awarded on recommendation of the department and approval of the faculty of the division.

The official name of the medical school will be the School of Medicine of the Division of the Biological Sciences.

University of Alabama School of Medicine

Dr. Andrew C. Ivy, professor of physiology and pharmacology, Northwestern University Medical School, Chicago, delivered the annual address before the Gorgas Medical Society of the School of Medicine, University of Alabama, May 7. His subject was "Physiologic Aspects of the Etiology, Symptoms and Treatment of Gastroduodenal Ulcer." Honorary Fellowship in the Gorgas Medical Society was conferred on Doctor Ivy.

University of Colorado School of Medicine

Promotions: Ralph W. Danielson, M. D., D. Oph., and Maurice E. Marcove, M. D., to instructors in ophthalmology.

The Seventh Annual Clinics were held at Colorado General Hospital dur-

ing the week of March 21. These clinics are held each year for the benefit of the physicians throughout Colorado and adjoining states. More than 200 physicians attended the clinics this year.

Dr. Norman Keith of the Mayo Clinic was the special speaker. The topic of his lecture was "Hypertension."

University and Bellevue Hospital Medical College

At a meeting of the Council of New York University held April 25, 1932, the resignation of Dr. Samuel A. Brown, dean of the Medical College for the past sixteen years, was accepted. Dr. Brown resigned his post to become a member of the Council of New York University.

Dr. John Wyckoff, secretary of the Medical College and Director of the Third Medical Division, Bellevue Hospital, was appointed Dean and Professor of Medicine, effective immediately. Dr. Currier McEwen, associate in medicine at the Hospital of the Rockefeller Institute, was appointed assistant dean and instructor in medicine, effective July 1, 1932.

Dr. Richard T. Atkins was appointed professor of otolaryngology. Dr. Lee M. Hurd was appointed emeritus professor of laryngology and Dr. John McCoy was appointed emeritus clinical professor of laryngology.

George Washington University School of Medicine

New appointments: Errett Cyril Albritton, M. D., professor of physiology and executive officer of the department; Vincent du Vigneaud, Ph. D., professor of biochemistry and executive officer of the department; Leland W. Parr, Ph. D., associate professor of bacteriology; Roscoe Roy Spencer, M. D., associate professor of hygiene and preventive medicine; Chester E. Leese, Ph. D., assistant professor of physiology; John H. Hanks, Ph. D., and Elizabeth Verder, Ph. D.,

assistant professors of bacteriology; George Brewer, M. D., instructor in physiology; Alden F. Roe, Sc. D., instructor in bacteriology; Phoebe J. Crittenden, Ph. D., instructor in pharmacology; Lane H. Allen, M. S., instructor in anatomy.

Temple University Medical School

Faculty changes: Lowrain E. McCrea, to associate in genito-urinary surgery; James Merriman Lynch and Nathaniel Hurwitz, clinical assistants in medicine; George D. Mulligan, clinical assistant in rhinolaryngology; Joseph A. Parrish, clinical assistant in surgical research; Joseph Weiner, instructor in medicine.

Duke University School of Medicine

April 8, Dr. Ralph Pemberton, associate professor of medicine, University of Pennsylvania, and chairman of the American Committee for the Control of Rheumatism, gave a clinic on arthritis at the Duke Hospital.

April 15, Dr. Warren H. Lewis, of the department of embryology, Carnegie Institution of Washington, gave a clinic on cancer.

April 22, Dr. Ernest W. Goodpasture, professor of pathology, Vanderbilt University, lectured on Cytotropic Viruses.

May 9-11, the National Board examinations were given with 21 students taking Part I and 6 taking Part II.

University of Virginia Department of Medicine

April 22, Dr. C. C. Speidel read a paper before the American Philosophical Society in Philadelphia on "The Growth and Repair of Living Nerves." May 10 he gave the principal address on this same subject on the occasion of the annual initiation exercises of the Virginia Chapter of Sigma Xi.

The ninth Postgraduate Clinic, given by the Medical Staff, was held at the University of Virginia Hospital on April 27 and 28. Sixty-nine doctors were in attendance.

April 27, Dr. H. E. Jordan attended the meeting of the Division of Medical Sciences of the National Research Council in Washington.

At the meetings of The Federation of American Societies for Experimental Biology in Philadelphia, April 27 to 30, Dr. S. W. Britton read a paper on "Effects Produced by Cortico-Adrenal Extract on Normal Animals"; Dr. Alfred Chanutin, on "Studies in Kidney Insufficiency Produced by Partial Nephrectomy"; Dr. E. L. Corey, on "Observations on Circulation in the Fetal Albino Rat"; and Mr. Herbert Silvette (Porter Fellow in Physiology), on "Some Effects Produced in Vitro by Cortico-Adrenal Extract."

May 2, Dr. Karl T. Compton, president of the Massachusetts Institute of Technology, spoke before the Graduate Scientific Club on "Science Finds a Way."

Louisiana State University Medical Center

The dedicatory exercises of this new school were held May 9, 1932, under the auspices of the American Society of Clinical Pathologists. The dedicatory address was delivered by Dr. H. J. Corper, Denver, Colorado. Dr. T. B. Magath, of Rochester, Minnesota, delivered an address on "The Importance of the Clinicopathological Laboratory in Modern Medicine."

Medical College of Virginia

Dr. William D. Cutter, secretary, Council on Medical Education and Hospitals, American Medical Association, delivered the commencement address at the close of the ninety-fourth session on May 31, 1932.

The honorary degree of doctor of science was conferred on General Walter D. McCaw, an alumnus, at the commencement exercises May 31, 1932.

Frank L. Apperly, M. A., M. D., Sc. D., has accepted the professorship of pathology. Until recently Doctor Apperly was a member of the department of pathology of the University of Melbourne. He was a Rhodes scholar and graduated in medicine at Oxford in 1920.

The Carnegie Corporation, New York City, has made an appropriation of \$10,000.00 toward the maintenance of the library of the Medical College of Virginia, which will this summer be housed in a handsome new building.

Adjoining the new library of the college the Richmond Academy of Medicine has built its home and library. This will contain the famous Joseph L. Miller collection of rare first editions, engravings, silhouettes, medical curios, etc. The headquarters of the Medical Society of Virginia will also be located in the Academy of Medicine building.

Quarterly Bulletin of the Health Organization of the League of Nations

Under this name a new periodical makes its initial appearance. Although not an official organ, it will publish records of international conferences, minutes of committees, reports by experts, etc. It will appear simultaneously in English and in French.

The first number contains the resolutions of the conference on immunization against diphtheria held in London in June, 1931, articles on "Medical Education in England," by Sir George Newman; "The Milk Supply of North American Cities," by R. Burri; "Tropical Pneumonia," by R. Gautier; "Review of Reports from Pasteur Institutes on the Results of Antirabies Treatment," and "Floods in China," by A. G. McKeadrick.

The Bulletin is published in Geneva, Switzerland. The annual subscription price is \$2.00, post free.

Personals

Dr. James Ewing, who recently resigned after thirty years as professor of pathology at Cornell University Medical College, has been appointed director of Memorial Hospital for the Treatment of Cancer and Allied Diseases in full charge of all its departments and activities, effective July 1.

Dr. Waller S. Leathers, dean Vanderbilt University School of Medicine, has been re-elected president of the National Board of Medical Examiners for the ensuing year.

Mr. Abraham Flexner, formerly secretary of the General Education Board, has been elected president of the Board of Trustees of Howard University, Washington, D. C.

The Stephen Walter Ranson Lecture at Northwestern University Medical School, given annually under the auspices of Phi Beta Pi, Medical Fraternity, was delivered May 6, 1932, by Dr. Edgar Allen, professor of anatomy and dean of the School of Medicine, University of Missouri. The title was "The Internal Secretions of the Ovaries."

Dr. Henry E. Sigerist, director of the Institute of History of Medicine at the University of Leipzig, Leipzig, Germany, has accepted the chair of the history of medicine in Johns Hopkins University Medical School. He will assume his duties July 1. Dr. Sigerist will succeed Dr. William H. Welch, in whose name the chair was founded at the same time that the William H. Welch Medical Library was established.

Dr. William Sisson Gardner, professor of gynecology, University of Maryland

Medical School, Baltimore, was guest of honor at a dinner, May 5, given in recognition of his many years' service in the medical school.

In recognition of forty years of service to the University and Bellevue Hospital Medical College, colleagues of Dr. William J. Pulley, clinical professor of medicine, gave a dinner in his honor, April 23.

Dr. A. Richard Bliss, chief of the division of pharmacology, University of Tennessee College of Medicine, had conferred on him the degree of doctor of laws by Howard College, Birmingham, Alabama.

Dr. Charles Singer, professor of medical history in the University of London, and visiting professor of the history of science in the University of California, has recently delivered addresses at the University of Minnesota and Johns Hopkins University on "Anglo-Saxon Magic and Medicine," "History of Anatomical Teaching," "Ancient Medicine," and "Galileo's Revolution in Science."

Harry E. Chaney, professor and head of the department of surgery in the University of Georgia Medical School and E. T. Adams, assistant professor of biochemistry, have resigned. Dr. Adams leaves immediately. Dr. Chaney leaves September first.

Thomas R. Boggs, associate professor of clinical medicine in Johns Hopkins University School of Medicine, has been awarded the decoration of the Purple Heart.

At a meeting of the Connecticut State Dental Association, March 30, Dr. Mil-

ton C. Winternitz, dean, Yale University School of Medicine, New Haven, was presented with the Newell Sills Jenkins Memorial Medal for meritorious service to the dental profession. The medal is awarded each year by the state dental association to the person who has made a notable contribution to dentistry, science or humanity. It has been awarded annually since 1922.

Dr. Eli Kennerly Marshall, Jr., professor of physiology in Johns Hopkins University School of Medicine since 1921, has been appointed professor of pharmacology and experimental therapeutics in that institution to succeed Dr. John J. Abel, resigned.

Dr. Ludwig Pick, professor of pathology, University of Berlin, and director of the Pathological-Anatomical Institute, Municipal Hospital, Friedrichshain, Berlin, will deliver the Edward K. Dunham Lectures for the Promotion of the Medical Sciences, May 3 and 5, at Harvard University Medical School.

Dr. William Boyd, professor of pathology in the Faculty of Medicine, University of Manitoba, has been recommended as a fellow of the Royal College of Physicians of Edinburgh.

Arno B. Luckhardt, professor of physiology in the University of Chicago, was elected president of the American Physiological Society.

William deB. Mac Nider, Kenon professor of pharmacology in the University of North Carolina, was elected president of the American Pharmacological Society.

G. Canby Robinson, director of the New York Hospital and Cornell Medical Association, was recently elected president of the Association of American Physicians.

James H. Means, Jackson professor of clinical medicine in Harvard Medical School, was re-elected secretary.

Joseph Erlanger, professor of physiology in Washington University School of Medicine, was recently elected to membership in the German Academy of Sciences.

August G. Pohlman, research professor of anatomy in St. Louis University School of Medicine, has been appointed dean and head of the department of anatomy in the School of Medicine of the University of South Dakota.

G. Carl Huber, professor of anatomy, director of the anatomical laboratories and dean of the Graduate School of the University of Michigan, was honored recently in special ceremonies by students, friends and colleagues when an oil portrait of himself was presented to the university. The event marked the forty-fifth anniversary of Dr. Huber's graduation from the university and as a teacher in the medical school.

Dean Lewis, professor of surgery in Johns Hopkins University, was elected president of the American Medical Association for the ensuing year.

Philip A. Shaffer, professor of biochemistry in Washington University, will deliver the Herzstein medical lectures at the University of California for 1932.

Deaths

Burton A. Randall, professor of otology in the University of Pennsylvania Graduate School of Medicine, died of heart disease, aged 73.

Reginald R. Walker, professor of clinical otolaryngology in Georgetown University School of Medicine, died of typhoid fever, aged 54.

David E. Hoag, clinical professor of neurology in University and Bellevue Hospital Medical College, died of pneumonia, aged 63.

James Birney Guthrie, professor of the principles and practice of medicine in Louisiana State University Medical Center, died of heart disease, aged 56.

James Hendrie Lloyd, emeritus professor of neurology in the Graduate School of Medicine of the University of Pennsylvania, died of pneumonia, aged 78.

Hadley Williams, professor of surgery in the University of Western Ontario Medical School, died of heart disease.

Alexander D. Blackader, emeritus professor of pharmacology, therapeutics and pediatrics in McGill University, died in March, aged 84.

Stafford McLean, clinical professor of diseases of children in Columbia Uni-

versity College of Physicians and Surgeons, died of heart disease in March, aged 46.

Charles L. Bonfield, for many years professor of gynecology in the University of Cincinnati College of Medicine, died suddenly in April from cerebral hemorrhage.

Hadley Williams, professor and chief of clinical surgery in the University of Manitoba Faculty of Medicine, died in April.

Arthur Burridge, assistant professor of medicine in the University of Manitoba Faculty of Medicine, died after a short illness, aged 57.

Charles Hampson Jones, professor of hygiene and public health in the University of Maryland School of Medicine, died in April of heart disease, aged 73.

John N. Coghlan, formerly professor of clinical otolaryngology, died in March of pneumonia, aged 66.

Elmer Hendricks Funk, professor of therapeutics in Jefferson Medical College, died suddenly May 13 of angina pectoris, aged 46.

Roy Bishop Canfield, professor of otolaryngology in the University of Michigan Medical School, aged 57, was killed in an automobile accident.

General News

George M. Kober Lecture

Dr. Ales Hrdlicka, curator of physical anthropology, Smithsonian Institution, Washington, delivered the annual Kober lecture, April 11, at Georgetown University School of Medicine, on "Disease, Medicine and Surgery Among the American Aborigines." The Kober lecturer is selected for noteworthy contributions to progress and achievements in the medical sciences, under the terms of a foundation for the promotion of scientific research in medicine endowed in 1923 by the late Dr. George M. Kober, who died last year.

Theodore B. Sachs Lectureship

The Theodore B. Sachs resident lectures in tuberculosis at the University of Illinois College of Medicine, will be given this year by Dr. Allen K. Krause, director, Desert Sanatorium, Tucson, Ariz. Dr. Krause was formerly associate professor of medicine at Johns Hopkins University Medical School and director of the Kenneth Dows Institute for the Study of Tuberculosis, Baltimore.

The Theodore B. Sachs lectureship at the University of Illinois College of Medicine is endowed by the Chicago Tuberculosis Institute.

Albert B. Kuppenheimer Foundation

In January, 1931, following the death of Mr. Albert B. Kuppenheimer, it was announced that he had bequeathed \$1,000,000 to the University of Chicago for research and study in the field of venereal diseases. At a recent meeting of the board of trustees of the University of Chicago, the Albert B. Kuppenheimer Foundation was established and a com-

mittee was appointed to allocate the funds. This committee is composed of Drs. Joseph L. Miller, clinical professor of medicine; Oliver S. Ormsby, clinical professor of dermatology, Rush Medical College; Samuel W. Becker, associate professor of dermatology; Oswald H. Robertson, professor of medicine and acting chairman, department of medicine; Dallas B. Phemister, professor of surgery and chairman of the department of surgery; Fred L. Adair, professor of obstetrics and gynecology; Franklin C. McLean, director, University of Chicago Clinics, and Frank R. Lillie, Sc. D., dean, Division of Biological Sciences. The bequest, which has suffered considerable shrinkage since the original announcement, has been turned over to the university. In accordance with the terms of the bequest, the income is to be expended wholly within the University of Chicago, of which Rush Medical College is a part.

Course on Tumors

Dr. William H. Woglom will give a course in the pathology and diagnosis of tumors at the Institute of Cancer Research in connection with the summer session of Columbia University, beginning July 5 and continuing six weeks. Classes will be held daily from 2 to 4 P. M., except Saturday, and the fee will be \$37. Application should be made to the director of the summer session, Columbia University.

New Medical Library in California

The new state medical library, authorized by the 1931 legislature for the purpose of aiding physicians, particularly in rural districts, to keep up to date in their practice, was started May 1, with

the cooperation of the University of California Medical School. The library will be maintained in two branches, one at the medical school in San Francisco, and one at the medical department in Los Angeles. From these centers medical journals and books will be sent to practicing physicians in any part of the state on request. Funds for the support of the project will come from the surplus account of the state board of medical examiners which is made up from medical license fees and taxes. An advisory committee has been appointed to supervise the work of the "packer library."

Members of the committee are President Robert Gordon Sproul of the university; Dr. John H. Graves, president state board of health; Dr. Percy T. Phillips, president state board of medical examiners; Dr. Langley Porter, dean of the medical school in San Francisco, and Dr. George H. Kress, dean of the medical department in Los Angeles. Miss Frances Van Zandt will be the librarian.

Education Campaign by Dental Society

The American Dental Association, through its Committee on Educational Publicity, plans a nation-wide educational campaign to be disseminated through the news columns of the newspapers and by means of magazine articles, through the lecture platform, the radio and other media. It is further planned to raise \$50,000.00 as an initial fund for this undertaking.

Another matter that is receiving attention by the committee is so-called group advertising which is paid for as display space by local groups in local newspapers. The Educational Publicity Committee of the American Dental Association is not sponsoring this type of pub-

licity. Its responsibility is limited to passing upon these messages as regards their truthfulness, lack of exaggeration and lack of controversial material. No names appear in this copy and it is a purely local matter for local groups to consider and use if they see fit.

Charles E. Dohme Memorial Lectureship

The trustees of the Johns Hopkins University announce that the eighth course of lectures on this foundation was given by Professor Ernst Waldschmidt-Leitz, Ph. D., director of the Institute of Biochemistry, Deutsche Technische Hochschule, Prague, Czechoslovakia.

The lectures were delivered at the Johns Hopkins School of Hygiene and Public Health, April 20, 21 and 22.

The purpose of the lectureship is to promote the development of a more intimate relationship between chemistry, pharmacy and medicine. The lecturer is selected by a committee representing the departments of pharmacology, chemistry and medicine in the Johns Hopkins University Medical School.

Research on Diabetes

The George S. Cox Medical Institute for research into the cause and cure of diabetes was opened at the University of Pennsylvania Hospital, March 18. Dr. James Harold Austin, John H. Musser professor of research medicine, University of Pennsylvania School of Medicine, is acting director, and Dr. Russell Richardson is in charge of the clinic service. Mr. Cox, a Philadelphia banker who died six years ago, left to the university a fund to support the study of diabetes, and the university added an annual grant of \$25,000.

Abstracts of Current Literature

Postgraduate and Graduate Teaching of Radiology

Any consideration of postgraduate and graduate instruction in medical radiology must take into account a number of factors: the present status of the subject as it affects, and is affected by, other phases of medical practice; the existing plane of undergraduate teaching of radiology; the number of qualified teachers available, and the objects which an ideal system of instruction should seek to attain.

Besides developing full-fledged specialists, however, the scheme of instruction should also include short courses in the different phases of diagnostic and therapeutic radiology.

A well considered scheme of instruction, therefore, should provide:

1. Short, strictly postgraduate, courses in different phases of diagnostic and therapeutic radiology for graduate physicians who may merely wish to keep informed on the value of various new methods or to prepare themselves to utilize one or another phase of radiology, and also for radiologists who may want to keep abreast of the newer technical developments and methods.

2. A comprehensive, graduate course of systematic and thorough instruction in every phase of radiology for physicians who desire to qualify as specialists.

The short courses should be open to any graduate physician, regardless of the character of his practice. Physicians taking such courses should be entitled only to certificate of attendance and should not be required to pass any examination, unless the number of short courses taken is sufficient to enable them to qualify as specialists. In this event they should be allowed to take a comprehensive

examination and, if they succeed in passing it, they should be entitled to a certificate and to the title of specialist.

The comprehensive course leading to a degree such as that of Master of Science in Radiology or Doctor of Radiology should be conceived along the broadest possible lines. It is difficult to see how anything like a thorough course of instruction can be compressed into less than three years. The privilege of registration should be restricted to graduates of class A schools and preference in selection should be given, or selection should be limited, to those who have had, as part of their premedical training, college courses in physics and biology or their equivalent. An internship of at least one year in a class A hospital should also be required as a preliminary to registration.

The first year of the graduate course should be devoted to anatomy, physiology and pathology and to the physical aspects of radiology. One-half year of concentrated training in anatomy, physiology, pathologic anatomy (otherwise known as gross pathology) and microscopic pathology would provide the strongest possible foundation for both roentgenologic diagnosis and radiotherapy.

To meet the needs of roentgenologic diagnosis, instruction in anatomy should lay particular stress on landmarks and relations of special importance in roentgenology and on the developmental phases of bones. Physiology should be taught chiefly in the form of a review, but special attention should be given to the more significant radiologic considerations.

The second half of the first year should be given over to radiologic physics, in-

struction in which should include both didactic lectures and laboratory exercises.

The second year should be fully taken up by diagnostic roentgenology. Not only should the students be taught how to interpret roentgenograms, but they should be required to spend a good part of their time in performing, under the guidance and supervision of qualified instructors, the numerous technical procedures incidental to the present-day practice of diagnostic roentgenology. Besides instruction and practical training in roentgenography and roentgenoscopy, the students should be taught the photographic and chemical aspects of roentgenography and the methods of protection required for the safe practice of radiology. Throughout this part of the course it is desirable that contact with clinical medicine and surgery be maintained.

The third year should be given over to therapeutic radiology, including roentgen rays, radium and, if possible, ultraviolet radiation. Students should be required to take an active part in the examination of patients, in outlining their treatment and in preparing patients for irradiation, as well as in the actual administration of the treatment.

The most feasible arrangement at the outset will probably be to delegate the general teaching of the subject to the most experienced and the best informed therapeutic radiologist available. He, in turn, should arrange to have those phases of the subject with which he is not sufficiently familiar presented by qualified specialists. The strictly radiologic teaching should be supplemented by lectures on related aspects of clinical medicine, surgery and dermatology.

As part of his training, each graduate student should be required to undertake a piece of research on some phase of diagnostic or therapeutic radiology and to prepare a report or thesis based on

such work.—U. J. DEJARDINS, *J.A.M.A.*, March 19, 1932.

Teaching Radiology to Interns

Statistical data from 619 hospitals approved for interns indicate that more than 80 per cent offer instruction in x-ray work. In some, provision is made for the rotation of the interns to include a brief service in the roentgen department, and in some of the larger hospitals there is a special x-ray internship. In others, occasional lectures are arranged to be given by the members of the staff of the roentgen department so that the interns may have more or less systematic instruction in roentgen diagnostics and therapy. In most hospitals, however, the x-ray instruction given interns is desultory and not under definite check.

Suggested Program of Instruction: (1) The nature and origin of x-rays and of secondary radiation, and the physical and biologic laws that apply to them. (2) The scope of roentgen examinations. (3) Fluoroscopic control of the reduction of fractures and dislocations and in the removal of foreign bodies. (4) Roentgen interpretation. (5) Roentgen terminology. (6) Therapy.

Circumstances will determine how far such a program can be carried out in the individual hospital. In large hospitals, with internships of from eighteen months to two years, it is quite reasonable that a portion of this time be given to the roentgenologic department, each intern spending a while in that department as a participating assistant. Such a stay should be for not less than two months, and three would be better. The practice of assigning an intern to the x-ray department instead of a place on a rotating service should be condemned; no fellow in the roentgen department should be accepted until after having served his regular internship, and preferably after a few years of general practice. Failure

to observe this precaution results in unbalanced training, which soon becomes evident in the practical work of the fellow.—JAS. T. CASE, *J.A.M.A.*, March 19, 1932.

Teaching of Radiology to Under-graduate Students

The method of general didactic class instruction in radiology as carried out in most institutions in the past has been a failure in many respects. It has certainly not accomplished the desired results, and the only service it fulfills is to give the class as a whole some idea of the scope of radiology, and this is not sufficient compensation for the time and effort. Didactic teaching by lectures to hitherto untaught students means in part the showing of series after series of roentgenograms or lantern slides representing pathologic conditions which the student sees with little or no understanding of their import. Even were he shown the normal first, he cannot correlate that appearance with the structures of the human body represented because he has never been taught to do so.

Whether anatomy is covered during the first year or, better, during the first two years, that is the appropriate time for demonstrations of normal living anatomy as depicted on roentgenograms or by fluoroscope. This could be done all at one time, but preferably, as each part of the body is taught, the normal roentgenographic appearances could be demonstrated.

Group demonstrations would always be desirable for all this teaching, especially to permit of questions being asked by the students, but, if not feasible, much improvement in the present teaching plan could be made possible even by the usual class demonstrations of the various parts as the anatomic instruction proceeds. This anatomic teaching should be carried out in the medical department.

The course in physiology is an important teaching opportunity for radiology. Many of the important and practical physiologic facts have been determined by fluoroscopic and roentgenologic observations.

Pathology is the next branch by which the student should be helped toward an understanding of the practical aspect of roentgenology. Pathologic anatomy in conjunction with roentgenology should be taught first, from the standpoint of the manner in which the disease affects the structure directly and grossly, and secondly, as it alters function, because roentgenology is essentially a study of pathology in the living subject and thus differs from morbid anatomy as it is usually understood.

It would seem preferable for all this preclinical as well as subsequent instruction to be under the direction of the professor of radiology, and for the teaching or demonstrations in each branch to be arranged through agreeable cooperation with the professor in each. There could be one fully equipped roentgenologic department in the medical school, with a well trained technician in charge who could handle all demonstrations and also take charge of all experimental work, as in research surgery, physiology, anatomy, pharmacology and other branches requiring it. This technician would not be a teacher. There are two ways in which roentgenologic teaching could be carried out. The first would be directly by a representative of the department of radiology. The other plan would be to place this instruction in the hands of trained and competent members of the staffs of the branches, but with the department of radiology having a cooperative oversight. A combination of the two plans might be found advantageous.

In the third year, the student should be taught to correlate his knowledge of anatomy, physiology and pathology in a

clinical application. The instruction should also be in the nature of a review, which intensifies the mental impression that may have been made previously. The instruction under the radiologic staff should cover a period of from sixteen to eighteen weeks during the last half of the year, with a weekly demonstration lecture.

In the fourth year, roentgenology and clinical medicine and surgery and the special branches should be still further correlated. A class section of about twenty students spends an hour a week for six to eight weeks in a medical roentgenologic conference in which the director or professor of radiology is the leader and with the medical staff in attendance. Similar conferences are held weekly on surgical cases, with the surgical staff in attendance. These conferences last throughout the fourth year, so that each student has from twelve to sixteen hours of instruction. A similar plan is carried out with the pediatric staff, although student attendance is optional.

In addition to this, clinical medicine and surgery, and even some of the other specialties, should be taught with the use of roentgenologic data from roentgenograms as a part of the clinical picture of each case under discussion. In more or less didactic teaching of clinical subjects, roentgenograms of typical cases might well be shown, with normal roentgenograms for comparison, as a part of the clinical picture of each disease. The preferable method of teaching radiation therapy would be through the agency of a cancer clinic group.—H. K. PANCOAST, *J.A.M.A.*, March 19, 1932.

Teaching of Clinical Medicine

Three groups of courses are offered (at Yale Medical School) in the department of clinical medicine, which includes the major divisions of internal medicine, pediatrics, surgery, obstetrics and gynecol-

ogy and psychiatry. The first group is prerequisite for admission to the second group and is introductory in content. It consists of a brief course of lectures dealing with the fundamental concepts of medicine; three courses for practice in the technics of physical examination, of physical diagnosis and of laboratory methods employed in diagnosis, and a course given in conjunction with the department of pathology in which patients are presented and discussed, emphasis being placed on the correlation of the clinical phenomena and the anatomical pathology observed in the diseases considered.

In the second group, which is also required, the student acquires a knowledge of the phenomena of diseases and the principles underlying them. Opportunity is given for practical experience in the study of the history and diagnosis of disease and in the treatment of patients, first in the wards of the hospital and later in the outpatient department. Four trimesters are required for this work; two and a half in clinical clerkship in the hospital, and one and a half in the various divisions of the outpatient department. The practical work is supplemented by clinics and conferences.

These courses are participated in by all divisions of the department of clinical medicine. An effort is made to treat the subject matter of clinical medicine as a single discipline to be approached from the same point of view irrespective of the disease under consideration, rather than from the point of view of the specialist dealing only with certain diseases or with particular organ systems.

The third, more advanced group of courses, elected by students in accordance with their interests provides opportunity for intensive work and specialization not only in the major divisions of clinical medicine but also in special fields of these

divisions. In the division of internal medicine courses are offered in diseases of metabolism, the circulatory system, the gastro-intestinal system, and the nervous system, in infectious diseases, in syphilis, in tuberculosis and in diseases of the tropics. These elective courses, limited to small groups of students and many of them repeated throughout the year, are in part practical experiences and in part seminar exercises. A particular effort is made to stimulate in the student the habit of reading widely from original sources concerning the subject matter of the course, with the hope that he will continue in the habit after graduation and that he will develop some degree of critical judgment in the reading of medical literature. Opportunity is also provided in the laboratories of the department for research work in preparation for the thesis required of every student before he receives his degree.—
F. G. BLAKE: Methods and Problems of Medical Education. Rockefeller Foundation, 1932.

Undergraduate Teaching of Radiology

In the undergraduate teaching of radiology, as in the teaching of other specialties in the undergraduate years, it is well to remember that we are not training specialists during the period of the four year medical course. The scope of such a course should embrace four cardinal points: first, a very brief history of the discovery of the roentgen ray, with subsequent developments; second, a very brief description of the physics of the apparatus; third, a rather full outline of the uses and limitations as regards diagnosis and treatment; and fourth, just sufficient detail as to technical interpretation and therapy, for the student properly to evaluate radiology as a possible life work. By far the most important part of the course is that time

devoted to the uses and limitations of radiology in diagnosis and therapeutics. We believe that the student should have had considerable didactic instruction in medicine, surgery, orthopedics, urology and other special subjects before taking the course in radiology. There is also another very good reason for putting radiology rather late in the curriculum, and that is to avoid having the student in his own mind place an over-emphasis on this diagnostic agency. A thorough training in history taking, physical diagnosis, and the actual handling of patients prior to the course in radiology will tend to combat this tendency and to show the proper interrelationship of the roentgen examination and other methods of diagnosis. The group taking a course in radiology should not be too large, for it is our feeling that much more benefit may be derived from the small, rather intimate groups, gathered around viewing boxes showing actual films, than from large classes, using lantern slides for demonstration. The actual subject matter presented is well divided into various sections, such as bones and joints, gastrointestinal tract, urinary tract, and so on. In commencing a demonstration of any of these subdivisions, we first have a group of normals, for it is practically impossible to obtain a clear idea of pathological process without first having a fairly good mental image of the normal. After normals have been presented, the various diseases and abnormalities are shown, and an attempt is made properly to evaluate the roentgenologist's opinion concerning these conditions. The limitations of the roentgen ray as a diagnostic means are stressed just as forcibly as are its good features. When the discussion of diagnosis has been finished, a relatively short period is devoted to radiation therapy, and very candid criticism of its advantages and shortcomings is given, the emphasis being placed on the diseases

which are amenable to radiation therapy, and the results which may be expected from this treatment. The matter of x-ray and radium burns is discussed, and the methods of protection and measurements of dosage are briefly given. The more recent advances in the treatment of infection, such as carbuncles and boils, are stressed, for it is in this field that radiation therapy is now extending its usefulness most rapidly. After the completion of the purely didactic meetings, several periods are given to a little practical examination. During the didactic work, only positive cases have been shown and the student may have received the erroneous idea that an x-ray examination must always show an abnormality. Using the routine films, this impression is soon corrected. To this regular course has recently been added an additional feature, which is apparently working quite well. The students in both the Out-Patient Dispensary and on the wards are now held responsible for going over the films of their patients with a medical member of the X-ray Department. This seems to be helping considerably in correlating physical signs, history, and laboratory work, with what has been reported from the roentgen examination. Many times we are able to show why there is an apparent discrepancy between the x-ray and physical examinations.—
V. W. ARCHER: *Southern M. J.*, March, 1932.

Medical History in Teaching Pathology

A method of education which seems to us of very great value (at Johns Hopkins) has evolved itself, partly by chance, in the course of the last four years. This is the composition of essays by second-year students during their course in pathology, on the history of some disease, of some operation or therapeutic measures, of some psychological disturbance affecting many peoples, or, indeed, of anything

related to medicine of not too recent origin. Each year for the last two years we have posted in the laboratory a long list of subjects from which students might choose. Each student writes his name opposite the subject of his choice. Care has been taken to avoid overlapping and so far there has been no repetition of topics. Since there are seventy students in each class, it is evident that in time many of the subjects although closely related to medicine, may not fall into the precise field of pathology. Nevertheless they serve well the major purpose, which is to afford the student a survey of the whole scope and trend of human endeavor in the age-long effort to comprehend and contend with disease. After the subjects have been assigned, a definite period of six weeks is allotted for the completion of the essays. It must be understood that this is in no sense required work and forms no part of the examination in the course in pathology which proceeds without interruption, and further that no credit is officially given for these essays, which are voluntary contributions produced in the student's free time. Nevertheless, when the Christmas vacation fell in the middle of the six weeks, it was found that many of the men spent most of their holidays in the library in Baltimore or in the medical libraries of Washington, Philadelphia and New York. Reports came from those libraries that there was an extraordinary wave of interest in the most recondite literature and that librarians found themselves searching out scores of ancient volumes which had long rested undisturbed.

Not much was expected of all this in the beginning, but the results were astounding. Each year seventy essays were presented, all typewritten, generally bound in book form, with photostatic copies of portraits, and with illustrations, frontispieces, title-pages, and

incredible bibliographic reference lists. In a surprising number of instances they were remarkable for the literary skill with which they were composed. Most interesting of all was the extraordinary enthusiasm with which these students attacked their problems and the great energy with which they worked to search the literature from the earliest human records, from papyri, early biblical writings, through the Greek, Roman and Byzantine epochs, and down through the Middle Ages to our own times.

The objection that this is no part of a course in pathology is admitted, but anything that arouses such a pitch of interest and affords the student, no matter what his particular topic, a survey of the whole slow development of ideas in the history of medicine up to the last fifty years of phenomenal progress, has great value in the course. The students take a new attitude toward the problems which still present themselves in such numbers and acquire a new appreciation of the difficulties and of the type of mental processes that have led to success in solving those difficulties that are now finished portions of our store of knowledge. They realize the curve of progress which is practically uniform in medicine, whatever the topic, although it would prove no doubt quite different in philosophy, law, or literature. Several of these essays have been published. Some of them are not only examples of the work of the students, but vivid contributions to the history of medicine.—W. G. MACCALLUM: Methods and Problems of Medical Education. Rockefeller Foundation, 1932.

Teaching in Obstetrics and Gynecology

Instruction in obstetrics and gynecology (at Yale Medical School) is offered to students during the first and second clinical years. The department aims to re-

duce didactic teaching to a minimum and to bring the individual student as closely as possible into actual contact with the patient. The work of the first clinical year is obligatory. It consists of conferences held twice a week during the fall and winter semesters, and of hospital ward work. For the conferences the class is divided into four groups of twelve students each. For six week periods throughout the year small sections of students serve as clinical clerks on the wards, and are assigned patients in rotation. They obtain and write the histories, make physical examinations under supervision, and perform the necessary laboratory observations. They follow these patients to the delivery suites or to the operating room where they witness or assist in deliveries and have the opportunity of seeing the pathological lesions of the pelvic organs at the operating table. In addition, ward conferences and teaching rounds are held three times a week, at which the various aspects of diagnosis, prognosis, and treatment are considered. Students electing obstetrics and gynecology during the second clinical year may choose one or all of several theoretical or practical courses.
—A. H. MORSE: Methods and Problems of Medical Education. Rockefeller Foundation, 1932.

Teaching of Pathology

An effort is made (at Yale Medical School) to impress upon the student that pathology is a branch of science concerned with the study of the natural history of disease, and that the primary consideration in its instruction is that the fundamental principles of the subject should always be kept in the foreground. Also it is considered important to keep in mind the fact that the main objective must be to prepare students of medicine for the study of clinical medicine rather than to give them a great factual knowl-

edge of pathology. As a result of our experience, we believe such policies to be sound, since, in our opinion, students approach clinical medicine with much more interest than they otherwise would, and pathology itself comes to mean much more to them.

For advanced students and for individuals who choose pathology as a vocation, emphasis is given to the broader biological and experimental aspects of the subject. Didactic lectures have been eliminated entirely. The general principles of pathology are presented during the first six weeks of instruction. Informal conferences are held with the entire class in order to give direction to the course of the work. Following this period, the entire class is together only at exercises which are conducted jointly throughout the academic year by the departments of pathology and clinical medicine. During two terms of eleven weeks each, the class, consisting of fifty or sixty students, is divided into three groups. Three different exercises are alternated among these groups three mornings each week. These exercises include experiences for the students in the fundamental principles of pathology, as well as in gross and microscopic pathology. Each student is supplied with a loan collection of slides.

Another exercise which is held one afternoon each week offers an opportunity to the student to study disease processes on living animals. Students in groups of four are given an opportunity to learn autopsy technic and the procedure of working up the material by actual participation in the performance of the autopsy, and personal supervision is given them in histological technic. Each student assists at ten to fifteen autopsies during the two terms and in the third term may elect to extend this experience.

During the school year four written

and practical tests are given but these are never announced until immediately before they are to be taken. It is our opinion that this is the only type of examination that measures the progress the student, as well as the instructor, is making.

In addition to the opportunities already mentioned, a number of elective courses are offered. One of the most popular is protocol analysis. This course is open to students who have finished their clinical clerkship work in the wards which follows immediately after the pathology course. The student is given an abstract of the clinical history together with the gross and microscopic description of the autopsy. The clinical and anatomical diagnosis are unknown to him. He works over the data, studies available specimens and microscopic preparations and reports the case at one of the regular conferences. In some instances the clinical history is not given to the student and he is expected to develop an approximation of what it was.

During the fall and winter terms a clinical pathological conference, open to all students, is held once a week. Usually two cases are presented at each conference. The clinical history of one case is given to the students on Tuesday of each week; on Thursday they turn in a written clinical and anatomical diagnosis; and on Friday afternoon an analysis of the case and the diagnoses are made for them by staff members of the departments of clinical medicine and pathology. The students are encouraged to participate in the general discussion. Another conference is held each week for the clinical staff at which current material is presented for discussion.

During the spring term a series of lectures in legal medicine are given on selected subjects by lecturers who are actively interested in the particular subject. Five lectures on the history of *

pathology are given evenings during the winter term. The old fashioned large classroom is eliminated and individual instruction is facilitated by assigning not more than six students to each room. Each student has a key to his room and he may come and go as he sees fit. Instructors have regularly appointed hours when they will be present to give any assistance desired.—J. F. FULTON: *Methods and Problems of Medical Education*. Rockefeller Foundation, 1932.

Need for Postgraduate Study

Organization of postgraduate study is necessary in every medical school for three reasons: 1. The medical curriculum is overcrowded and needs supplementation for the senior student; 2. New knowledge and methods are being acquired every year, and the medical graduate cannot keep up with an advancing medicine and so requires supplementary courses; 3. The clinical practice of the practitioner gets rusty in certain branches, and he requires refresher courses.—NEWMAN, G. H.: *Quart. Bull. Health Organization, League of Nations*, March, 1932.

Future of Medical Education

The future of medical education seems to depend on an effective co-ordination of the science and art of the several subjects of the medical curriculum, on sound clinical technic and apprehension, on a discerning examination system, and on continued education after graduation, and at the back of all these must be love of truth, keenness in its pursuit and wisdom in its application. The necessity of integration of chemistry and physics into physiology and pathology, of physiology and pathology into medicine, surgery and obstetrics, of the laboratory into clinical study, of the science into the art—that each of these aspects shall be taught in principle and not overburdened with detail in such a way as to give the student no time to reflect

and comprehend and grow—this is first and fundamental requirement.

To reach this purpose we must bear in mind the essential things in student and teacher alike. The student is only capable of acquiring and understanding a limited amount of knowledge. Its quality and quantity are, therefore, of the first importance. The greater the detail commended to him, the less may he really apprehend the principle; and, in any case, medical education, within the curriculum, cannot provide him with complete knowledge; at best it can but give him some foundation and the tools of learning. The burdensomeness of his course hitherto has been due in large measure, though in varying degree, to the nature of its organization, its duplication, its insistence on unnecessary detail, the memorizing of formulae for examination purposes, its apparently endless series of systematic lectures (most of which are now no longer necessary) and its over-specialization of certain subjects by enthusiastic teachers.

Much of the solution of the problem depends on the teacher of medicine, in any of its branches, being an educationalist. Too often in the past, he has undertaken to teach without either knowledge or experience of the principles and methods of education. The result has been that he has proved, in spite of medical competency, an indifferent instructor and not a true educator or comprehender of the capacity of his pupil.

Secondly, clinical study must remain the sheet anchor of medical education and must be strengthened both in technic and understanding. The student must be so trained as to be able to stand alone in clinical skill and judgment. Instruments of precision, apparatus and the laboratory should be supplementary to the use of his own eyes and ears and hands in elucidating the truth of his patient's condition—the life history of the patient, subjective symptoms, physical signs, supplementary tests, aftercare

—for only thus are we educating his mind to analyze, estimate and measure the deeper affinities. The final judgment must always depend on the acumen and competence of the practitioner, not on his instruments.

The oppressive load of the examination system calls for reconsideration by the examining bodies. At present, despite of the reasonableness, high competency, and goodwill of the examiners, the system constitutes a restriction on medical education. So heavy has the student's burden become, that he is driven to standardize his effort, in degree and kind, by the prescription of the examining body—not the love of learning, not what he requires for life, not even his technical skill and experience, but what will answer the questions on the day of examination becomes unfortunately all too often the student's criterion. Inevitably the occasion of examination is subject to chance, superficiality, brevity and hazard. There seems to be a general consensus of opinion in all the medical schools that what is required is an examination which shall be reasonably uniform, which shall follow and not lead the education provided, which shall be severely practical and clinical as well as theoretical, and which shall include a record of the work done by the student and how it was done.

Lastly, the rapid and continuous growth of medical knowledge and its application make necessary the organization of postgraduate courses for advanced or special studies, or for "refresher" courses. Many facilities already exist, but more should be done to secure for each medical graduate facilities for holding house appointments and internships, and undertaking postgraduate study. Such mature study will emphasize that curative and preventive medicine are not separable in purpose or in practice. To cure is to prevent, it is to give the patient health and prolong his days.

Those engaged hitherto in "curative"

medicine are finding their medical functions more and more preventive every day; and in every country the small group of whole-time medical officers of health engaged in preventive work are finding that their functions are becoming more and more "curative" in purpose. The experience of both is that healing and prevention inevitable overlap each other.—NEWMAN, G. H.: *Quart. Bull. Health Organization, League of Nations*, March, 1932.

Didactic vs. Practical in Teaching Clinical Medicine

In general, it may be said that the duty of clinical departments, like that of scientific ones, is to show how information may be gathered, and, when attained, how it may be interpreted. The student must be given the chance to observe and record and be inspired to study and think. He should get his facts for himself from patients, with such guidance as seems necessary, not have them handed to him in some sort of classroom exercise.

There remain, however, certain functions which the lecture can serve. There is also the consideration that most students like lectures; without them they are apt to feel adrift. Chief of these functions is that the lecture may serve to arouse interest. In the lecture, also, the student may be given a better orientation in a subject that he can acquire for himself from his case teaching and textbooks alone. The lecturer can emphasize the important things and minimize the unimportant. He can also present and discuss recent knowledge in his field and criticize new ideas, so that the student may be thoroughly exposed to the current of medical thought.

I do not wish to imply that lectures should be solely disputative and hortatory and never purely informative. A certain number of the facts that every physician must know lend themselves to

classroom presentation. The description of technic, particularly if at the same time demonstration is required, comes in this category.

There is also the matter of the desirability of allowing all students of a school to come in contact with such master minds as that school may be fortunate enough to possess. This may be possible in the lecture alone. The function of the lecture under these circumstances is the inspirational or provocative much more than the informative. The master will stimulate ideas far more than implant facts. In certain instances it will be his intellectual brilliance, the newness and originality of his thoughts, that chiefly impresses; in others it will be his personality, his character, his ideals, the fruits of his experience that will sink deep. He will create disciples. One may remember a great teacher more for himself than for what he taught. He teaches by example.

In speaking of the relative value of practical training and didactic instruction in clinical medicine, I should like to mention the educational value of responsibility. There is nothing which incites medical students to the acquisition of professional skill more than giving them responsibility for the care of patients. The sooner in their careers this can be managed, the better.

Medicine is an applied science. In the training of students we should never lose sight of this, and the art of medicine, which includes but transcends the science, takes root in the feeling of responsibility the physician has for his patient's welfare and his desire to heal him.—MEANS, J. H.: *J. A. M. A.*, Apr. 30, 1932.

Student Research in the Medical School

Whether or not a given student shall be permitted to do research must be governed, first of all, by the opinion of the instructor; but, in the second place, it is

certainly clear that not all students who may be considered as having originality are thereby qualified to carry on this type of work; the psychology of the individual concerned must certainly be considered. No student should ever be accepted for this type of work unless he himself has a sufficiently intense urge to make his obtaining an opportunity to do research a vital factor in his own consideration. He must be willing to make sacrifices in order to have the opportunity to do original work.

In considering the legitimate burden which any instructor may assume in the supervision of research students, it is necessary to consider the instructor individually. As a general rule, in my department I do not advocate more than an average of one student to an instructor. It is safe to conclude that the greater the experience of instructors the more capable they are to guide research students. The custom of distributing responsibility in proportion to rank and experience is one which I consider a fundamental part of sound teaching organization and which I particularly wish to emphasize.

We assign a field of study rather than a problem, indicating to the student that this field is one worthy of general study and suggesting that he familiarize himself with some of the major points in the literature. During the time that he is doing this, and before a concrete problem has been evolved, he is encouraged to assist in experiments which are being carried on in the same field. It has been our experience that after approximately a year's apprenticeship the student will find some individual phase of the general problem which particularly appeals to his interest, and this automatically becomes his particular problem. It has further been our experience that in only exceedingly rare instances can a medical student, during this required course, do more than follow through a single problem, whether it is done alone or jointly

with some instructor. More than this tends to waste, in futility of effort and in diversification beyond the individual's capacity, the time available for such work.

The required class work of students must be somewhat better than the average before they are permitted to begin or continue special work in my department. Any student who has started work with us is checked repeatedly throughout his course in regard to his required work and is suspended from the special privileges of the department if his grades fall below what we consider a thoroughly satisfactory average. It is fundamentally incorrect to permit any student to continue in a routine medical course and at the same time occupy his time and interest with special work to the detriment of his regular class work. Nevertheless, my experience strongly supports the opinion that every student, regardless of his eventual career, should concentrate his every moment of free time within a single field. This, of course, makes it both possible and, often, advisable for a student to transfer his work from one department to another, an arrangement which would be much more difficult if his original assignment were more specific. This does not necessitate wandering in an intellectual sense, since the proper correlation and coordination of research activities should recognize no departmental boundaries but should develop in whatever combinations or relationships are to the best interests of the student.—CUNNINGHAM, R. L., *J. A. M. A.*, April 30, 1932.

Control of Medical Specialists

We should encourage the development of centers of instruction for the specialties in university medical schools, in special hospitals and in special clinics, where applicants may have not only facilities for good laboratory and clinical instruction but also opportunities to serve as in-

terns, resident specialists and clinical assistants for prescribed periods.

We should endeavor to promote standardization of instructional programs and clinical duties in the various institutions so that the students engaged therein would be prepared in the various subjects covered by the examining boards and would be able to demonstrate their fitness for their special work.

I think there should be a certain measure of control by some central authority that would study the operation of existing agencies and, if such were found satisfactory, would help promote their influence by giving them its stamp of approval.

I do not think that this matter of specialization in medicine should be turned over to the state for examination and licensure, for such a course would be fraught with all the dangers and pitfalls that impede the progress of our national and state governments, already hampered and cursed by too much politics.—WILDER, W. H.: *J. A. M. A.*, April 30, 1932.

Function of Graduate School in Training of Specialists

Medical schools, which for the most part avowedly confine their activities to training men and women to become general practitioners of medicine, are beginning to recognize their further responsibilities in the more extensive training of physicians in the several clinical specialties. Every good medical school can offer excellent facilities for advanced study in some one or more of these fields. This means opportunity for individual advanced work under faculty supervision. It also means opportunity for conducting research work on some problem related to one or more of these fields. If a specialist is to be more than a technician, he needs to know more of certain phases of each of these fields than it is possible to learn in any undergraduate

medical course. If he hopes to advance the science of his chosen field, he must become familiar with the principles and methods of research. The medical school can and should supply him with opportunities for both these purposes.

Proper survey of clinical material at the command of the medical school almost always reveals a considerable amount, the study and care of which is not properly a function of the student at the undergraduate level or of the intern preparing for general practice. I suspect that much of the deplorable tendency of so many medical graduates to rush early into the practice of medical specialties results from their enforced contacts as clerks and interns with clinical material which should be reserved for the training of specialists. Much also of the overcrowding of the undergraduate medical curriculum results from the cosmic urge of the specialists in the medical faculty to tell all they know, a desire which might be less harmfully if not more profitably granted if their efforts were directed toward graduate students of clinical specialties.

This suggested readjustment of clinical facilities in most schools should not necessitate increased facilities, though in many instances facilities might be increased by eliminating internships in hospitals in which the clinical material available is more suitable for the training of specialists than for the training

of general practitioners.

If, then, medical schools possess such a preponderance of desirable facilities for graduate training in the specialties, why have not more of them offered their resources for such training? Principally, I believe, because of fear of increased teaching burdens and increased expense for equipment and faculty. A great part of both these objections comes from failure to break away from old traditions of teaching. School authorities have difficulty in grasping the fact that classes, formal lectures and routine laboratory instruction are entirely foreign to graduate work. The only additional equipment necessary is individual laboratory and examining room space. Much of this already exists and is occupied by instructors whose aspirations are only for faculty advancement and who may well be replaced by graduate students. Necessary additions to the faculty consist chiefly of men of inspiration to replace those capable only of dogmatic instruction of undergraduates.

If the practice of clinical specialties is to become more of a profession and less of an occupation, medical schools must recognize and accept their responsibilities in providing adequate opportunities for a small number of carefully selected medical graduates to fit themselves thoroughly for the practice of special clinical medicine.—WILSON, L. B.: *J. A. M. A.*, Apr. 30, 1932.

Book Reviews

Midwifery

By Ten Teachers. Edited by Comyns Berkeley, J. S. Fairbairn and Clifford White. 4th edition. William Wood and Company, New York. 1931. Price, \$7.50.

This book is intended for the undergraduate medical student. It presents the collective wisdom and experience of men whose reputation as teachers and obstetricians is of the highest degree. They have collaborated in the preparation of the whole book. It contains 5 sections: I. Pregnancy, normal and abnormal. II. Labor, normal and abnormal. III. The Puerperium. IV. The Newborn Child. V. Relief of Pain and Suffering in Obstetric Practice. The well merited popularity of this book brings a fourth edition within a period of fourteen years. It is well illustrated by 300 drawings and 4 plates. The printing deserves special commendation.

History of Medicine in the United States

Francis R. Packard, M. D. In two volumes. Cloth. New York: Paul B. Hoeber, Inc., 1931. Price, \$12 per set.

In his first volume Dr. Packard considers medical legislation, education and hospitals during the earliest period, the medical profession in the war for independence and the history of the medical department of the army up to the close of the Spanish-American War. The second volume provides a history of the medical department of the United States Navy and of the medical schools founded during the first half of the nineteenth century. The author then outlines the development of medical practice and education in some of the states and concludes with chapters on foreign influences

in American medicine, notable events in American medicine and surgery, and the beginnings of specialism in America. There are numerous appendixes of interest, including particularly reprints of early lectures and documents, a list of the surgeon generals of the United States Army and a discussion of the ether controversy. There are sections on homeopathic medical colleges and on women in medicine, on physiomedical and eclectic colleges, and finally a bibliography and a well prepared index.

These two volumes may be considered a collection of interesting notes on the history of medicine in America, reflecting Dr. Packard's personal interests, and beyond that in no sense of the word an adequate record of events from the point of view either of completeness or of historical perspective.

Public Health

White House Conference on Child Health and Protection. The Century Co., New York, 1932. Price, \$3.

This report of the committee on public health organization of the White House Conference on Child Health and Protection is based on an extensive survey of the organizations, official and non-official, in the United States which are devoted to protecting and promoting the health of the people.

The committee finds that the whole concept of public health service is changing. No longer is public health service concerned primarily with the control of communicable disease. Today public health programs are designed actively to promote mental and physical health as well as to prevent disease.

This evolution of public health is cre-

ating a constantly increasing need for more complete and more efficient organization to safeguard and promote the health of our people.

The committee considers the administrative problems and relation of the various units of public health service, from the federal organization to the county unit, in terms of the future, and takes up other important phases of the question such as the training of personnel, administration of child health work as a part of official health programs, and health aspects of food control.

Growth and Development of the Child

Part III. Nutrition. White House Conference on Child Health. The Century Co., New York, 1932. Price, \$4.

A study of the child's nutrition was conducted by the Committee on Growth and Development under the chairmanship of Dr. Kenneth D. Blackfan. The results of this study, which involved an examination of a vast amount of information gathered from observation and measurement of many individuals, from experimentation in the laboratories of Europe, the Orient, and the United States, and from the available literature on the subject, are presented systematically and fully in this part of the committee's study of the growth and development of the child. This book contains both an analysis of the components of diet and an account of the intricate chemistry of the body. The topics of discussion range from an appraisal of the national food supply to the feeding habits of children and the psychological facts in nutrition.

Psychology and Psychiatry in Pediatrics

White House Conference on Child Health and Protection. The Century Co., New York, 1932. Price, \$1.50.

This report considers the important question, "Should the medical practitioner attempt to give advice when difficulties threaten the satisfactory development of personality in a child under his care?" The report is a challenge to pediatricians and family doctors.

Although the report does not urge all doctors to attempt to become expert in the fields of psychology and psychiatry, it states the opinion that adequate physical care of the child cannot be given without attention to whatever intellectual and emotional difficulties may be present, and concludes that when trouble arises and the individual child is in distress a well-informed and alert physician is the obvious adviser. "Unwillingness of doctors at large to acquire the ability to deal wisely with problems involving personality of the child," says the report, "may lead to transfer of this field to formal organizations or to individuals without medical experience. Such a solution will inevitably diminish both prestige of the private practitioner of medicine and the interest of his job."

Health Protection for the Preschool Child

White House Conference on Child Health and Protection. The Century Co., New York, 1932. Price, \$2.50.

This report undertakes to answer the question: To what extent is the health of the children in the United States who are the nucleus of the next generation being protected? The report is based on house to house inquiries made by representatives of nearly a thousand different local organizations, reaching 146,000 children in three-fourths of all cities of over 50,000 population and 37,000 children living in the rural areas of 42 states. The result is the most complete and graphic picture of how preventive medical and dental services are being applied to the preschool child.

which has yet been presented. The book is an invaluable addition to the literature of the preschool child. It includes an introductory statement regarding the present status of preventive medical and dental measures, a discussion of the findings of the survey, a series of reference tables showing in detail the survey findings in each area studied, and a discussion and explanation of the administration of the survey and the computation of the data collected.

Wheeler and Jack's Handbook of Medicine

Revised by John Henderson. 9th Ed. William Wood and Company, New York. 1932. Price, \$4.00.

This is a very handy little volume which can be carried in the coat pocket for ready reference by the student as he carries on in his clinical clerkship. He will find it of great value.

A Handbook of Ocular Therapeutics

By Sanford R. Gifford, Professor of Ophthalmology, Northwestern University Medical School. Lea & Febiger, Philadelphia. 1932. Price, \$3.25.

This book gives an abundance of information on the essentially valuable procedures as distinguished from the purely traditional ones. The material is so organized as to be instantly accessible and includes all of the most modern methods which the author had himself proven to be effective or which are vouchered for by ophthalmologists of standing. Pathogenesis and diagnosis are included as far as they relate to treatment. Surgery is discussed in so far as it concerns the indications for operation; minor procedures which may be considered as a part of office treatment are included in detail. The methods recommended rest on a foundation of theory and experience.

Body Mechanics: Education and Practice

Report of the Subcommittee on Orthopedics and Body Mechanics, White House Conference on Child Health and Protection. The Century Co., New York, 1932. Price, \$1.50.

This is a report of a searching investigation made into the relation of body mechanics and posture to the health and well-being of children.

Body mechanics is defined as "the mechanical correlation of the various systems of the body with special reference to the skeletal, muscular, and visceral systems."

"There is positive evidence," the report says, "to prove that not less than two-thirds of the young children of the United States exhibit faulty body mechanics," and that this condition is likely to continue into adult life. The evidence gathered shows that improvement in body mechanics is associated with improvement in health and efficiency.

An important distinction is made in the report between training in the principles of good body mechanics and training in various physical exercises.

The detailed recommendations and the suggested program of corrective exercises presented here will be of value to all those concerned with the care and training of children.

Clinical Roentgen Pathology of Thoracic Lesions

By William H. Meyer, Professor of Roentgenology in the New York Post Graduate Medical School. Lea & Febiger, Philadelphia. 1932. Price, \$6.00.

Intended primarily for the student of roentgenology, this book offers a source of concise information concerning the facts and the data obtained from roentgen diagnosis. A complete alphabetical cross-index adds to its value as a source of ready reference.

Textbook of Clinical Neurology

By Israel S. Wechsler, Professor of Clinical Neurology in Columbia University. W. B. Saunders Company, Philadelphia. 1932. Price, \$7.00.

This work is based mainly on personal teaching and clinical experience, representing, in the main, an individual approach to bedside neurology. The subject is discussed from an anatomo-pathologic basis, hence reproductions of pathological specimens and anatomical drawings take the place of photographs of patients. References to the literature are few in number but carefully chosen. The text is concise and obviates the necessity of reading much matter to gain a little information.

Handbook of Tropical Fevers

By N. P. Jewell and W. H. Kauntze, Nairobi, Africa. William Wood and Co., New York. 1932. Price, \$6.00.

This book is the result of a critical study of tropical fevers as they occur in the tropics and presents a truer picture of them than could be gained from the study of isolated cases met with in temperate climates. With the steady increase of these fevers in other countries and the larger field of activity thus given, this work will be found to be of great value to every medical student.

Biochemistry in Internal Medicine

By Max Trumper and Abraham Cantarow, Instructors in Medicine, Jefferson Medical College. W. B. Saunders Company, Philadelphia, 1932. Price, \$5.50.

This is an attempt to bridge the gap between abstract biochemistry and physiology and clinical medicine. By the avoid-

ance of ultrascientific expressions and by the use of easily understandable terms combined with a clarity and directness of statement, the authors have made the reading of the book easy and enjoyable. Fundamentals are stressed; lengthy discussion of laboratory methods are avoided; practical applications of biochemistry of value to the clinician are stressed. This book will serve as a useful companion volume worthy of position among those other texts which constitute the working library of the medical student.

Clio Medica: Italian Medicine

By Arturo Castiglioni, Professor of History of Medicine, Royal University, Padua, Italy. Paul B. Hoeber, New York 1932. Price, \$1.50.

This is a companion volume in the series of primers on the history of medicine which aim at presenting in a concise and readable form a number of phases of the long and complex history that underlies the great edifice of modern medical science. Students will find these small, inexpensive books very useful in their studies of medical history.

A Textbook of Embryology

By Mary T. Hartman, Professor of Zoology in the Kansas State College of Agriculture and Applied Science. Lea & Febiger, Philadelphia. 1932. Price, \$4.25.

This book is especially designed for the premedical student and presupposes a general knowledge of zoology and mammalian anatomy. The text is well written, concise and profusely illustrated by excellent drawings. It is very readable and up to date in the treatment of the subject matter. A good book for the medical student.

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